FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Program Plans Set for GFDNA's Meeting Sept. 13-14

MINNEAPOLIS — Program plans have been announced by the Grain & Feed Dealers National Assn. for its meeting in the Pick-Nicollet Hotel, Minneapolis, Sept. 13-14.

The meeting has been called an annual work meeting because the traditional convention extras will be postponed until the first big winter convention, March 6-8, 1960, in Kansas City, Mo.

The meeting is open to all members, officers and directors.

Featured Sept. 13 is the national country elevator committee meeting, with Leland C. Miller, chairman. The meeting is open to all members interested in trade discussions for renegotiation of the Uniform Grain Storage Agreement. Clarence Palmby, associate administrator, Commodity Stabilization Service, and Ray Pollock, director, grain division, CSS, will discuss the procedures of the Commodity Credit Corp. cost study.

The national transportation committee, Freeman Bradford, chairman, will also meet Sept. 13. Discussions will include changes in traffic and transportation, truck movement of grain and rail rate adjustments.

Seaway Discussion

A special report on the "Economic Impact and Operational Challenges of the St. Lawrence Seaway on the Grain Trade" will receive attention in a panel discussion Sept. 14. Participants will include Ron Kennedy, F. H. Peavey & Co., Minneapolis, chairman; Robert C. Haldeman, transportation section, Agricultural Marketing Service, U.S. Department

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House Unit Okays Hog Payment Bill

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Over previously expressed vigorous objections by top USDA officials, the House Agriculture Committee has approved a bill which would provide a compensatory payment program for pigs marketed at light weights.

However, on the basis of the previous record of the committee in obtaining House approval of measures advocated by Committee Chairman Harold Cooley, it is a wise guess that this will never see daylight on the statute books. (This past week saw

(Turn to HOG PAYMENT, page 77)

U. S. Milk Cow Numbers Continue Marked Drop

WASHINGTON — The continuing farm changes seen by feed men serving the dairy industry are reflected in a new U.S. Department of Agriculture report on milk cow numbers.

The smallest number of milk cows on farms during June in three decades of records has been reported by USDA. The June, 1959, estimate was set at 19.3 million head, almost half a million head, or 2.4% below the June, 1958, count.

Except for the 3½% decrease shown a year earlier, the 1958 to 1959 reduction in milk cows counted in June was the sharpest in the past 11 years and a continuation of the decline prevailing generally since the 1944 all-time high.

The figures are another indication of the continuing trend toward fewer but larger dairy farms, with the decline in number of dairy farms more than offsetting the increase in number of cows per farm.

Cow numbers in June were down in all regions except the West, where a slight upturn occurred. Decreases of 3-4% were indicated in the north central regions. Decreases of 1-2% were noted in other areas.

Factors Responsible

The report said factors largely responsible for the further decline in milk cow numbers were the trend toward fewer but larger and more commercialized type dairy farms and continuation of favorable meat animal prices. The decline in the number of farms and in the proportion of farms keeping milk cows more than offset the increase in cows per farm.

Dairy product and feed price relationships continued favorable, but were counteracted by attractive meat animal prices resulting in heavy culling of poor producers from dairy herds. Undoubtedly, USDA said, some dairymen, confronted with the high costs of changing marketing practices and high meat prices, chose to liquidate their entire herds.

(Turn to MILK COWS, page 77)

NBC Organizes Launching of National Broiler Sales Effort

WASHINGTON—A nationwide effort to "unify the broiler industry behind positive approaches that will bring some relief to an industry in critical financial straits" was launched at a recent meeting in Washington. (Another story on the meeting appeared in Feedstuffs Aug. 15, page 1.)

Representatives from national, state and regional organizations, and industry leaders from throughout the U.S. attended at the invitation of the National Broiler Council.

Action planned for "Operation Upturn" includes the NBC fall promotional campaigns, "Golden Chicken El Dorado," Bro-Hen sales promotion, attempts to do a better selling job to the Armed Forces, school lunch program, and through retailers, according to Frank Frazier, NBC executive vice president.

"Every tool available will be used in making 'Operation Upturn' a success," Mr. Frazier noted.

Don Corbett, president of the council, noted that: "If we don't solve our problems, no one is going to solve them for us. And one thing stands paramount in finding solutions to the problems, both those that face us individually, and those that face us as an industry. We've got to keep people eating chicken."

National and regional poultry associations pledged a teamwork of effort to the success of "Operation Upturn." Included in this group, in addition to the NBC, were representatives from the American Poultry & Hatchery Federation; American Feed Manufacturers Assn.; Institute of American Poultry Industries; International Trade Development Committee; National Council of Farmer Cooperatives; Southeastern Poultry & Egg Assn., and Northeastern Poultry Producers Council.

National and regional feed manufacturers gave enthusiastic support to the "Upturn" program, with emphasis on the Bro-Hen project, and a special state campaign to supplement the program was adopted by officials of some 12 state poultry organizations represented at the meeting.

(Turn to BROILER INDUSTRY, page 77)

'Inaccurate Cost Data, Poor Mill Planning' Hamper Feed Industry, Report Indicates

CHICAGO — The exceptional and rapid growth of the formula feed industry in the past few years has resulted in major problems for the industry, a national study reported this week.

The study indicated that inaccurate cost information and poor mill planning are two of the "most important weaknesses" affecting the industry.

The in-plant study was conducted by Wolf Management Engineering Co., Chicago, a consultant firm, and was directed by A. J. Bohl, chief engineer for Wolf. Undertaken on behalf of Feed Production School, Inc., the study is one of several research projects to be presented to the feed industry during the Feed Production School Sept. 23-25 in Kansas City.

This research project deals primarily with costs of pelleting, but in making the study, the engineers made certain observations on feed production operations.

"In general one of the outstanding weaknesses in the formula feed industry is the lack of accurate cost information," the study pointed out. "Without knowing what the true costs are for materials, labor and equipment, and without accurate costs for control purposes, it is impossible to determine where improvements can be made."

Many feed mills are producing at approximately 60% of standard, the study disclosed.

"Unsound engineering in plant lay-

(Turn to COST DATA, page 77)

FEEDSTUFFS *Features This Week*

POULTRY NUTRITION: The first in a series reviewing Poultry Science Assn. meeting reports appears on **page 6.**

BROILER INDUSTRY: General trends in the broiler industry of the southern states are discussed on **page 10.**

INGREDIENT PROCESSING: A comprehensive article on the processing of major feed ingredients begins on **page 18.**

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California Co-op to Build Sixth Mill

SAN FRANCISCO — The Poultry Producers of Central California will start construction on the cooperative's sixth feed mill sometime during September. It will be built at Turlock, Cal.

The mill will supply poultry, turkey and dairy feed in the area which is rapidly increasing in importance as a poultry raising center. At the present time the association's mills in Stockton, Cal., and Merced, Cal., are serving the area but "inadequately" in terms of growth. Other PPCC mills are located in Petaluma, Yuba City and Salinas.

The new Turlock mill is expected to cost $1,900,000, and will have a capacity of about 150,000 tons a year, according to Horace Nobman, feed production manager. It is expected to be in operation by next July, and will incorporate all the latest in processing equipment.

The building will be concrete slipform construction. All grain holding bins, soft stock holding bins and finished feed bins will be located inside the structure itself. New pellet mill and crumbling facilities will also be installed. The manager of the Turlock facility has not yet been named.

Jones-Hettelsater Construction Co. of Kansas City has been awarded the contract to construct the mill, according to Robert A. Shone, president of the cooperative.

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Tell the Whole Story

FROM A NUMBER OF REPORTS, it appears that the problem of "special mix" operations for feed manufacturers is taking on a new intensity. The desire of feeders to select their own formulas and order inclusion of additives which require variation from the manufacturer's regular line of production has proved to be a headache for both production and sales personnel of feed companies. In many instances, handling of such orders has seriously hampered efforts to schedule production in the most efficient manner possible. Companion problems include the costs and complications of having larger inventories of a greater variety of products available to meet these customer demands.

With more college-trained men now operating farms, it is perhaps logical to expect that special formulations would be in greater demand. These modern feeders have a better knowledge of fundamental nutrition than did their fathers and their uncles, and they quite naturally wish to apply this knowledge. Their closer association with college feeding recommendations also influences their ideas of formula requirements.

FOR THE MOST PART, it should be easier for feed manufacturing companies, staffed with highly-trained scientists and technical personnel, to deal with customers having a broader knowledge of feeding and an understanding of nutritional requirements. An informed customer, while he perhaps can put up a better argument, is more likely to yield to scientific facts than is a less informed buyer. However, there certainly can be honest differences of opinion between authorities on feeding, and it is known that there is not always an "only" way to achieve a feeding result. Thus, in the interest of retaining valued tonnage, the manufacturer quite often must accept the "special mix" situation as part of his way of doing business.

The fact that there are different ways of achieving comparable results, after all, is what makes horse racing or the feed business or any competitive enterprise. The college-trained feeder should not be criticized for attempting to operate in a way that he regards as most profitable to his feeding operations. He is contributing mightily to more efficient agriculture, and he in the long run is the fellow who shows the necessary understanding of sound feeding which is making formula feed volume increase steadily.

SOME MANUFACTURERS, it is understood, are meeting this problem of special formulation through manufacture of certain "basic" formulas for shipment to branch mills or dealer outlets having mixing equipment. These formulas are designed to serve as a basic mix to which requested additives or other ingredients can be added in a more convenient way. This method could well be the answer to the problem for some manufacturers who find that it fits their particular methods of operation and philosophy of service.

Another approach, which might be described as the longer-range, fundamental concept of feed merchandising and service, is a part of the industry's broader public relations efforts. It is the effort to persuade feeders in general that the feed manufacturing industry represents a vast "board of experts" which can be entrusted to provide feeds for all classes of livestock scientifically-designed to do the most efficient feeding job possible. Industry research, closely coordinated with college research, is strongly emphasized, and it is also pointed out that close coordination between research, production, buying and transportation experts in the industry make it possible for manufacturers to add further economic value to the final product. In other words, the industry on a collective basis and through individual companies is organized and operated to give the feeder the most for his feed dollar in terms of profitable feeding results.

This is a sound educational program, and it deserves even more emphasis than it is now getting. Broad public relations efforts can help strengthen the service image of the feed industry among its customers, but what is needed is more stress on the "sales pitch" level by individual manufacturers. A number of feed companies do have active sales programs based on the reliability of

(Turn to **TELL THE WHOLE STORY,** page 81)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

The formula feed business around the nation this week was still fairly slow, but there were some indications that volume was beginning to pick up. Harvesting is about done, and farmers again will have greater opportunity to determine their fall feeding needs. Severe drouth conditions in some areas have been relieved by rainfall. Low prices for broilers and hogs continued to be a depressing factor in animal protein feeds. The wholesale feedstuffs price index dropped to 77.4 this week, compared with 78.3 the previous week and 81.9 a year earlier. A slight drop to 69 was noted in the feed-grain index as against 71.1 a year ago. Based on Chicago prices, the hog-corn ratio was 11.5 this week, up slightly from 11.3 a week ago but sharply below the 16.3 mark for the comparable week last year. (Ingredient prices in detail on pages 78-80.)

Southwest

"Sideways at a slow pace" is the way one feed manufacturer in the Southwest described formula feed sales activity this week. And this comment is typical of those made by mills in the area. Business is generally lagging, continuing the pace of previous weeks this month. Most mills will run five days, but not at full production capacity.

Turkey and swine feeds are still the top moving items. While the turkey volume is about at its peak, swine feed demand is not what it was earlier. Broiler feed movement is a little slower. There has been very little cattle feed demand. Although there has been some talk of forward cattle feed bookings, the volume done seems to be small.

Good pastures, abundance of feed grains and unfavorable feeding ratios are getting the blame for the slow sales pace.

Price lists for next week are expected to show most feeds unchanged, with some high protein feeds up 50¢ ton and some low protein feeds down 50¢.

Northwest

A slight upturn in manufactured feed demand this week began pulling the industry in the Northwest out of its summer slump and away from last week's poor showing, considered by many plants as the worst of the year.

Though this week's business was better, manufacturers' reports of just how much better varied.

One representative said his firm was planning to return to a full five-day production schedule for the first time in several weeks, but also noted that demand was still some behind a year ago and production for the remainder of August would have to be extra good to make it possible to chalk up a better month's record than a year ago.

Another firm reported that its August business was considerably ahead (about 15%) of last year at this time. This representative said hog feed business was good, broiler business was steady and there was some improvement in dairy feeds.

It was reported at mid-week that feed ingredient handlers in this region generally were limiting orders to nearby requirements. During the week ended Aug. 18 prices averaged 60¢ ton lower at the main marketing centers, with millfeeds and animal protein feeds accounting for most of the softness.

Soybean meal prices turned upward this week, but the change was not deemed sufficient to result in any increase in feed prices. Prices for other protein sources were off or unchanged.

The Minneapolis office of the U.S. Department of Agriculture reported that although parts of the Great Plains states have suffered from drouth and excessive heat, the Crop Reporting Board estimate—based on Aug. 1 conditions—indicated the output of feed grain tonnage would likely equal near last year's total. Reduced outturn of oats, barley and sorghums will be largely offset by record corn production.

Low prices for broilers and hogs continued to be a depressing factor in animal protein feeds and producers felt the competition for sales outlets.

Southeast

All types of feed business in the Southeast are reported as being practically unchanged. Most feed mills report their running time as normal, while most feed ingredient buyers continue to buy their major proteins on an as-needed basis, because many believe they will see cheaper prices a little later.

The absence of any large quantities of western corn delivered into this area by truck has caused a fairly good demand for local corn on the basis of $1.45 bu., an advance of 3¢ bu. for the week.

Many oil mills began crushing of cottonseed this week and it is reported that fairly large tonnages of cottonseed meal were sold to the trade, with fairly good interest from exporters.

The $5 drop in citrus pulp prices last week did not stimulate any great movement of pulp. Good pastures and heavy surplus of milk still prevail in Florida, and dairymen still cannot see pushing their cows for extra surpluses of milk.

The latest government report shows that practically all of the southeastern states continue to reduce their chick placements. North Georgia broiler prices still remain practically unchanged at 14½@15¼¢ f.o.b. the farms.

Central States

Volume of sales in the central states area during the third full week of August seemed to be just a little lighter than usual, although mills have been generally operating on a five-day week (with an occasional exception here and there). Apparently some of the mixers had enough of a backlog of business on their books to keep them busy, but fresh sales do not seem to have quite kept pace with their mill operations.

Prices have been whittled down to some degree but there has been nothing in the way of a general downward readjustment in this respect and the cuts that were put into effect were in no sense severe.

Movement of hog feeds is probably about relatively the best of any of the various types, although there has been some broadening in the demand for turkey feeds, a seasonal development to be expected at this point. For poultry feeds as a whole, some betterment in demand would be welcome.

Cattle feed is moving slowly in a seasonal way and close observers of

(Turn to **MARKETS,** page 83)

Peter Hand

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To help you produce better feeds, Peter Hand Research Farm conducts thousands of feeding experiments on poultry, swine and cattle. Latest scientific developments —vitamins, antibiotics and additives—are evaluated.

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Bank Authorized to Repossess Chickens; Hearings Set on Chemell Debt Proceedings

By Special Correspondent

ATLANTA, GA.—The First National Bank of Gainesville, Ga., was authorized by the referee in bankruptcy at Atlanta, to repossess more than 96,000 chickens in 11 breeding flocks to protect the notes the bank is holding of more than $65,000 on the flocks.

The contractors had given notes to L. A. Chemell, who assigned them to the bank in July. In the action, the bank declared the contractors were unable to secure feed on credit for the birds and that, if the petition were granted, the bank will make the necessary arrangements to feed the flocks.

In his ruling in favor of the bank, J. Ellis Mundy, referee in bankruptcy, pointed out the action was not to be in conflict with a court ruling barring bankruptcy procedures against the Chemell corporations following Chemell's petition for a six-month moratorium on $1,500,000 of debts owed to more than 110 creditors.

A hearing in Gainesville has been set for Sept. 8, when the creditors may file their claims and proofs of claims in the action. Chemell has been ordered to file a detailed plan of reorganization and a financial statement by Sept. 10.

A hearing when the Chemell reorganization plan will be presented creditors has been set for Sept. 14 in the federal court in Atlanta.

Moratorium Requested

Chemell has requested a six-months moratorium on existing debts so that the corporations can continue to operate, and has asked for authority to issue certificates of priority so that feed and other supplies can be secured on credit from new sources. In his petition, Chemell declared one large feed company has agreed to furnish the feed for some two million broiler hatching flocks on this basis.

Chemell's petition states that the company is solvent, and that recent credit restrictions have necessitated the action. The petition further declares the assets exceed the liabilities and that with the six months moratorium, all creditors can be paid in full.

The creditors listed in the original petition do not include the amounts owed, but range from firms supplying such things as printing forms, to one aircraft firm which remodels planes for individual industrial use. Twenty-four banks throughout the Southeast, including one New York house, are listed.

Among the large feed mills listed, in addition to smaller manufacturers in the area, are Allied Mills, General Mills, Master Mix Feed Mills, Pillsbury, Ralston Purina and Cosby-Hodges.

A spokesman for one of the banks said that no formal statement could be made until the hearings are held, but indicated that credit will be continued for contractors who are good credit risks. He expressed the opinion that few "border-line" contractors are still able to secure bank financing on their operations, and said he thought most of those cases were already out of business.

A spokesman for one of the feed companies involved said company officials had met in Atlanta to discuss the situation and said it was the consensus of opinion that Chemell was solvent, and that things can be worked out to prevent liquidation of the flocks. He added he felt certain the birds will be continued on feed.

Some broiler contractors said that liquidation of the flocks might tend to cut down on the number of broiler chicks placed each week, but that the actual cash loss might have a more serious effect on the broiler industry as a whole. It was pointed out that so far, local banks were not seriously cutting out broiler financing for established contractors, but liquidation of such a large operation might prompt credit restrictions on broiler financing.

CHICKS FOR SUPPLY FLOCKS CUT

WASHINGTON—The indicated domestic placement of pullet chicks for broiler hatchery supply flocks by leading primary breeders of broiler replacement stock totaled 2,279,000 chicks during July, according to USDA. This was 21% less than domestic placements in July last year. The July reduction was the third consecutive monthly cut after increases earlier in the year. Total placements (domestic plus export) were reported at 2.4 million, compared with about 3 million a year earlier. Sales of replacement pullets by the breeders covered in this report provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

George G. Greenleaf Named Ohio Secretary

GREENVILLE, OHIO—George G. Greenleaf has been appointed executive secretary of the Ohio Grain & Feed Dealers Assn., Inc., Greenville, according to a recent announcement.

George Greenleaf

The appointment will become effective Sept. 1. Mr. Greenleaf succeeds G. E. (Boots) O'Brien as secretary of the association.

Mr. Greenleaf was coordinator of the elevator and farm supply training course at Michigan State University until his recent resignation.

He is a former National Farm Loan Assn. officer with teaching and administrative experience in public and military schools.

He graduated from Michigan State University in 1943 and entered the military service. He became hospital information and educational officer and was on the staff that set up Shrivenham University for American personnel and developed programs of study in cooperation with European universities.

Mr. Greenleaf was discharged in 1946 and worked a short time as graduate assistant at Michigan State University. He then was employed by the Federal Land Bank as secretary-treasurer on one of its farm loan associations in Michigan until 1954.

Single California Egg Co-op Being Planned

LOS ANGELES—A steering committee made up of directors of California cooperative egg marketing associations has voted unanimously for the development of one statewide egg marketing co-op, according to a report in The Poultryman.

The principle of a centralized state egg marketing co-op had previously been approved by the board of directors of the co-ops represented on the steering committee, it was indicated.

The co-op general managers are now developing plans for the legal, organizational, operational and physical setup of the statewide association, and working out procedures for bringing about the proposed unification.

Cooperatives involved in the effort are: Poultry Producers of Central California; San Diego Cooperative Poultry Assn.; San Joaquin Valley Poultry Producers Assn., and Poultrymen's Cooperative Assn.

Nutrena Promotes George W. Ahern

CEDAR RAPIDS, IOWA—George W. Ahern, former assistant manager of the Nutrena Mills office in Cedar Rapids, has been named branch manager in charge of administration for the firm in eastern Iowa. He will coordinate area sales and production at the firm's plant in Cedar Rapids and will supervise area administrative work.

Mr. Ahern joined Nutrena in 1946 as desk salesman at the Minneapolis mill, and since has been a field salesman in Wisconsin, and assistant mill manager in Minneapolis. He was transferred to Cedar Rapids in 1952.

Purina Will Open Wisconsin Mill

FOND DU LAC, WIS.—Opening ceremonies are planned for Sept. 12 at the new Ralston Purina Co. mill at Fond du Lac. Several thousand people from throughout the state are expected to attend. Gov. Gaylord Nelson will be one of the welcoming speakers.

Entertainment will include performances by nationally-known television and radio stars, including Minnie Pearl, the Wilson Sisters, and Captain Stubby and the Buccaneers.

The program will start in mid-morning with conducted tours through the new mill as visitors arrive. A free luncheon of barbecued chicken will be served by the company beginning at 11 a.m.

Admission to the ceremonies and luncheon will be by tickets which local Purina dealers will furnish free of charge to those who call at their stores.

According to company officials, the new mill will manufacture a full line of Purina Chows for livestock and poultry. It will have a capacity of about 100,000 tons of Chows per year. Approximately 50 persons will be employed.

Sherwood Buys Baltimore Firm

BALTIMORE, MD. — Sherwood Feed Mills, Inc., Baltimore, has purchased the Baltimore Feed & Grain Co. Sherwood Dickinson, president of the Sherwood firm, said the transaction "is a further step in the expansion of both companies, and gives the Sherwood Feed Mills, Inc., the status of being the only privately owned feed manufacturer operating in the Baltimore area."

Sherwood Dickinson

The personnel of Baltimore Feed & Grain will be kept intact, and no change in policy is contemplated, except that G. Hartman Blamberg, president, is retiring after 56 years in the feed and grain business, according to an announcement from the Sherwood company. Woodrow W. Harrison is vice president and general manager, and Florian G. Schmidt is sales manager.

It was mentioned in the announcement that the acquisition of Baltimore Feed & Grain is of particular benefit to the Sherwood company because of the former's research facilities, which can be used by both companies.

Baltimore Feed & Grain will continue to distribute Staley products, in addition to making its own general line of poultry, dairy and specialty feeds. The company has its own pier in the Port of Baltimore. These facilities make it possible to move grain from the Midwest via the St. Lawrence Seaway. The principal plant is located in Baltimore, with plants also located at Federalsburg and La-Plata, Md.

The Sherwood Feed Mills area of operations now includes New England and the Middle Atlantic states from South Carolina up to and including Maine, with exports and imports to and from Central America, Africa, Europe and Hawaii.

Officers of Sherwood Mills, besides Sherwood Dickinson as president, are: S. Jones Dickinson, executive vice president; George S. Seymour, vice president of research and sales, and Hazel C. Bafford, secretary.

Sherwood Dickinson started the Virginia-Maryland Dairy Feeders Co. in 1934 when he was 20 years old, and this was the original start of the present company, which has now had eight expansion programs.

Iowa Poultry Head Dies Following Illness

AMES, IOWA—Dr. Robert E. Phillips, 49, professor and head of the department of poultry husbandry at Iowa State University, died recently at the Iowa State hospital following an extended illness.

Dr. Phillips joined the Iowa State staff in 1938 as an instructor and was named head of the department in 1946. He was born in Joplin, Mo., and received bachelor of science and master of science degrees from Kansas State University, Manhattan, Kansas. He received his doctor of philosophy degree from Iowa State in 1941.

Dr. Phillips was host to the recent national meetings of the Poultry Science Assn. at Iowa State. He was also in charge of all local arrangements for meetings and entertainment and was present at most of the meetings as a host.

He served as an instructor at Kansas State University in 1936 and 1937, and head of the poultry division of the American Butter Co. from 1937 to 1938. From 1942 to 1944, he was associate professor at the University of Maryland.

Egg-Type Chick Output Off

WASHINGTON — Commercial hatcheries' output of egg-type chicks showed another sharp drop in July, the U.S. Department of Agriculture reports. While July is a seasonally low month, it may be noted that output was down 21% from a year earlier, and another cut is indicated for August.

Egg-type chicks hatched during July totaled 14,385,000, compared with 18,189,000 in July last year. Production during the January-July period was some 477.3 million—down 7%, a decrease about in line with recent indications.

Most regions showed some decrease in July. However, there was little or no decrease in some western and southern regions. Output in those sections this year has been running ahead of 1958, while there have been marked cutbacks in other areas because of the low egg prices.

The number of egg-type eggs in incubators on Aug. 1 was off 11% from a year earlier, indicating another drop in the August hatch.

Meanwhile, demand for broiler chicks also was down, and the hatch of broiler chicks in July was off 5% from a year earlier. The July total was about 163 million. This was the third successive month to show a decrease from 1958. The number of broiler eggs in incubators on Aug. 1 was down 7% from a year ago.

"Don't Buy a Pig in a Poke!"

This advice to buyers, of course, simply means, "Don't buy unseen (or untried) merchandise." It originated in the marketplace in early England, where shrewd sellers would put a sick pig in a sack (or poke), hoping that some unwary buyer would purchase it sight unseen. This strategem often worked, for buyers hesitated to risk opening the sack and losing the pig in the crowded market. A few sellers even went so far as to substitute a cat for a pig — and you can imagine how the buyer felt when he got home and took a look at his "pig in a poke", only to find that he was "letting the cat out of the bag!"

When you buy a "poke" of Small's Dehydrated Alfalfa, you always know *exactly* what you're getting because we give you a *guaranteed certificate of analysis.* Back of this guarantee stand the reputation for quality and all the facilities that have made Small's Dehydrated Alfalfa the first choice of discriminating feed buyers since the inception of the industry.

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FOR FEEDS WITH A FUTURE

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Part 1

Review of Poultry Science Papers Presented on Nutrition, Related Subjects

By Dr. J. R. Couch
Texas A&M College

Seventy five papers were presented before the nutrition section of the Poultry Science Assn. meeting at Iowa State University, Ames, Aug. 4-7. Thirty colleges, universities and governmental laboratories and seven commercial laboratories were presented in program appearances.

In addition to the papers from the nutrition section, subjects covered in other sections at the annual meeting of the Poultry Science Assn. which were thought to be of interest to the feed industry are summarized in this review.

UNIDENTIFIED FACTORS—Three papers were presented which pertain to this general heading.

The first of these was from the U.S. Department of Agriculture research center at Beltsville, Md., and was given by Dr. C. A. Denton. The Beltsville group evaluated the unidentified factor activity of six common fermentation products available to the feed industry.

Eighty to 100 male chicks were used in each test and 4% fish solubles was used as in the positive control diet. The fermentation by-products were fed at levels recommended by the manufacturer both in the absence and in the presence of the condensed fish solubles.

Two of the fermentation by-products were ineffective in producing a growth response. Three samples were effective only in the absence of fish solubles which indicates that the samples contained the fish factor in the opinion of the writer. Two samples were effective either in the presence or absence of fish solubles which indicates, according to the opinion of the writer, that the fermentation products in question contained some of the fish factor but also may have contained other factors in addition. These fermentation products are now widely used as sources of the fish factor and have been used with considerable success by nutritionists, particularly in the Midwest where fish solubles are high priced and fish meal is difficult to obtain.

Two papers were given on "unidentified factors" in corn and soybean oil meal which pertain to improved egg size, improved hatchability and improved fertility associated with the use of these two ingredients in feed formulas for laying hens.

Egg Size

The Washington State paper was given by Dr. L. S. Jensen and was concerned with further studies on "Unidentified Nutritional Factor Affecting Egg Size."

The addition of 5% wheat germ oil, safflower oil or corn oil to a semi-purified diet significantly improved egg size. The same improvement was noted by Texas workers when corn or soybean oil meal were used or when a formula containing both corn and soybean oil meal was fed to laying hens.

Dr. Jensen reported that fish oil significantly depressed egg size. The Washington State group also reported that a better response was obtained with corn than with corn oil and further that the same response could be obtained by feeding soybean oil meal in the semi-purified type diet. It was stated by Dr. Jensen at the end of his paper that the increase in egg weight was due to the increase in egg weight of the egg yolk.

The Texas paper presented by the writer based on data obtained by C. R. Cregor, research assistant, showed that egg production, egg weight, fertility and hatchability of fertile eggs could be significantly increased when either corn or soybean oil meal was substituted in a synthetic type formula or semi-purified diet. Best results were obtained when corn and soybean oil meal were both included in the formula. These data explain the reason for the difficulty in obtaining an increase in hatchability and/or fertility with a corn-soybean oil meal type basal diet.

Hens used in the Texas studies were reared from one day of age on the formula and maintained on the same diet throughout the laying study. Four diets were used in this work. The first consisted of soybean protein (Drackett), with glucose monohydrate as the source of energy. The diet was supplemented with adequate levels of minerals and vitamins. In the second group, corn was substituted for the glucose monohydrate and in the third group soybean oil meal (44% protein) was substituted for the soybean protein. The fourth group was fed a practical type diet composed of corn and soybean oil meal supplemented with vitamins and minerals.

Results obtained in this study were quite striking. Egg production, egg weight, feed conversion, hatchability and fertility were each improved by the use of the practical ingredients. Highest egg production, fertility and hatchability resulted when the birds were fed the corn-soybean oil meal diet.

Fluid Egg Yolk

Fluid egg yolk has been reported to contain an unknown growth factor. Studies were carried out by Dr. D. E. Green and co-workers from the University of Illinois. The report on these investigations was given by Dr. Green. It was concluded that a large part of the growth promoting activity of fluid egg yolk could have attributed to a better balance of known nutrients including fat and protein rather than to any previously unrecognized growth factors.

GROWTH PROMOTING VALUE AND DIGESTIBILITY OF SOYBEANS AND SOYBEAN OIL—This paper was presented by Dr. F. W. Hill, Cornell University, who reviewed previous work from Cornell and other laboratories to the effect that certain fats produced a marked stimulation of growth of chicks fed purified diets. The diets were practical broiler rations. In general it may be stated that the fats of vegetable origin which are unsaturated, produce an increase in growth rate and have a higher rate metabolizable energy value than does animal tallow.

There has been a great deal of interest during the past few months in the use of ground whole soybeans as a source of protein and also as a source of fat in poultry feeds. This was reported at the Maryland Nutrition Conference in 1958. A number of laboratories have conducted experiments in this field including Dr. E. L. Stephenson, University of Arkansas.

Dr. Hill stated that the use of heat treated ground whole soybeans as a source of the oil failed in the Cornell laboratory to stimulate growth as effectively as a mixture of soybean oil meal and degummed soybean oil. The metabolizable energy of ground whole soybeans and raw extracted soybean flakes were found to be greatly improved by heat treatment which confirms previous work in this field.

A number of heat treatments were used. Optimum conditions, according to the report of Dr. Hill, for maximum growth and highest metabolizable energy value were 4 lb. pressure for 10 minutes and with 20% moisture. The yield of metabolizable energy from ground whole soybeans was substantially less than that expected from a knowledge of the energy content of soybean oil meal and a degummed soybean oil combination. An analysis of the excreta from the birds revealed that the results obtained were due to a low digestibility of soybean oil in the soybeans.

Experiments were also carried out with heat treated whole soybean flakes. In this case, the soybean oil was found to be effective in stimulating growth. It was stated that the flaking process may produce sufficient disruption of the cell structure to permit a maximum digestibility of the oil of the whole beans and thus permit a full expression of the growth stimulating properties of the whole soybeans which should be equivalent to that of the soybean oil meal, plus the degummed soybean oil.

There is a great deal of interest, as was stated earlier, in the possible use of whole soybeans containing the oil as a feed ingredient. It would appear desirable for some of the large soybean processors to investigate this field and use the great amount of knowledge which these firms have in properly processing the whole soybeans if such are to be used as a feed ingredient. It appears uneconomical and undesirable for untrained personnel to attempt to enter a field and process soybeans where there is such a wealth of information available in the technical field of processing and engineering which could make the ground whole soybeans into a very desirable feed ingredient.

THE NUTRITIVE VALUE OF DEFATTED STARFISH MEAL—An interesting paper was presented by Dr. N. T. Rand, VioBin Corp., on "The Nutritive Value of Defatted Starfish Meal." Starfish are detrimental and destroy oysters, according to Dr. Rand, and could offer an additional protein supplement to be used in poultry feeds when processed.

It should be rather interesting to the feed trade to have the approximate analysis of the starfish meal product. The whole meal contains 3-7% moisture, 30-61% ash, 27-36% protein, 4-8% fat, and 8 to 28% carbohydrate or nitrogen free extract material. The defatted starfish meal which was reported on at this meeting analyzed 4% moisture, 47% ash, 30% protein, .3% fat, and 19% NFE. The ash is composed very largely of calcium carbonate.

The latter product was used first in a Drackett protein-type synthetic diet.

The addition of 2% defatted starfish meal produced a significant increase in growth in this study, thus illustrating that the product contains unidentified growth factor activity which might be classified under the "fish factor."

Additional studies were carried out in which 3% defatted starfish meal produced an increase in growth with a corn-soybean oil meal practical type diet. Dr. Rand concluded that defatted starfish meal could be used as a source of protein, calcium and unidentified growth factors in the formulation of practical poultry feeds. This product could enter the feed ingredient field in an area where the industry is deficient in unidentified growth factor supplements.

Dr. J. R. Couch

AUTHOR—Dr. J. R. Couch, author of this three-part review of papers presented by research authorities at the recent Poultry Science Assn. conference at Iowa State University, is a professor in the departments of poultry science and biochemistry and nutrition at Texas A&M College.

RESTRICTED FEEDING OF REPLACEMENT LAYING STOCK PULLETS—Two papers were given on the restricted feeding of commercial egg production stock. The first of these was presented by Dr. J. H. Quisenberry, head, department of poultry science, Texas A&M College.

Dr. Quisenberry had conducted three experiments involving 7,400 pullets. A report on part of this work was presented in the Dec. 20, 1958, issue of Feedstuffs.

Dr. Quisenberry's report showed that the caloric intake was influenced by the type of management and the caloric value of the diet. Caloric restriction was effective in delaying maturity and reducing body weight at the time of egg production, and a slight increase in egg size was observed with any method of restriction practiced. Restricted feeding had no consistent effect on rate of production or hen housed mortality.

In these studies the laying mash formula was placed before the birds at 22 weeks of age. It might be important to point out that the high energy type mash containing 13-15% protein was allowed to the birds at a level of 10 lb. per 100 birds per day. This would appear to be a satisfactory restriction allowance.

Colony Cage Management

Dr. Quisenberry also reported on colony cage management. It was pointed out that some of the major problems in using colony cages are cannibalism, increased culling rates, social competition, increased fly problems, more dirty and broken eggs and possibly reduced egg production.

Colony cages have been adopted in many sections as a new system of management during the past couple of years. It was interesting to note that birds raised in colony cages consume more feed and were heavier than birds kept under the same type of conditions either on range or in floor pens.

Rearing mortality was highest in the colony cages. This could be reduced significantly by using a high fiber type growing formula. Egg production in colony cages was equal to that of hens kept in floor pens but inferior to the production observed in birds kept in individual laying cages. One of the principal problems in keeping hens in colony cages is cannibalism. The best method of controlling the cannibalism appears to be to debeak the birds.

The second report on restricted

(Turn to POULTRY SCIENCE, page 81)

Purina Ad Cites Investment Opportunity In Midwest Dealerships

CHICAGO — "Providing feed dealer service demanded by today's business farmer opens up profitable business opportunity," the Ralston Purina Co. declared in an extensive advertisement in the midwest edition of the Wall Street Journal.

"While a sound start has already been made in establishing Super-Service type Purina dealers throughout the Midwest, there is still a major opportunity for investors, either through building new installations in open markets or investing in an existing Purina dealership, to help develop new profit-building opportunities," the ad said.

The illustrated two-page spread notes that assembly-line methods and increasing population promise to revolutionize the major midwest business of feeding poultry and livestock.

"The business farmer," says Purina, "is rapidly turning more of his feeding needs and services over to well-qualified feed dealers, as a further step in improving the efficiency of his over-all operation. He no longer has the time or wants to mix his own feed or be his own nutritionist. He wants to turn that phase of his business over to a well-qualified feed dealer, which will allow him more time and energy to look after the over-all management of his farm."

Return on Investment

Established Purina dealers, the advertisement said, are earning up to 22% return on investment (net profit rate, after owners' salaries, on total assets).

"Independent Purina dealers, offering Super-Service poultry and livestock nutritional helps, such as grain storage, grinding and mixing facilities, a large variety of research-approved formulas for blending Purina concentrates with the farmer's grain and on-the-farm service, are leading the way among feed dealers in the Midwest in providing this new concept of feed dealer service," according to the ad.

A picture of an installation being built by "Purina Super-Service dealerships," to keep pace with the rapidly changing needs of the poultry and livestock farmers, is included in the advertisement. "This type of business," it was noted, "must have high-speed grinding and mixing equipment, bulk feed handling facilities, grain bank storage and, most of all, well-trained, high-caliber servicemen."

The ad—including pictures of such things as an "automatic egg factory," pig parlor and push-button cattle feeding set-up — also included this copy:

"The heavy grain-producing states of the Midwest are truly the production center of the nation for the steaks, pork, lamb chops, milk, eggs and bacon that keep Americans the best-fed people in the world. Here, in a twelve-state area, 77% of the hogs, 48% of the milk cows, 46% of the laying hens, 44% of the turkeys, 38% of the beef cattle and 33% of the sheep are raised. . . . Every day 11,000 new customers are born for this giant feed-food industry.

Missouri Feed Law to Be Effective Aug. 29

JEFFERSON CITY, MO. — The new feed law passed by the Missouri legislature this session will become effective Aug. 29, according to William L. Wyss, director of the feed and seed division, Missouri Department of Agriculture.

He stated that all existing registrations for 1959 will continue to be in effect for the remainder of 1959 even though some provisions of the new law may be different than the law under which they were registered.

Among these differences is the fact that the statement, "For mixing for resale, tonnage inspection fee not to be paid hereon," was required under the old law before exemption from the payment of the tonnage inspection fee could be claimed.

Under the new law, exemption may be claimed if the purchaser uses the feed bought in another registered commercial feed upon which the tonnage inspection fee is paid. The old law required that nitrogen free extract be listed on the label; whereas the new law does not.

The new law, likewise, requires both a maximum and minimum per cent of calcium in the mineral guarantee.

Other changes in the new law are as follows:

- The reporting of tonnage quarterly instead of semi-annually.
- A provision allowing persons distributing feeds only in packages of 10 lb. or less to pay a registration fee of $25 and abstain from reporting and paying the tonnage inspection fee.
- The inclusion of all feeds to be fed to animals other than man instead of including merely livestock and poultry feeds.
- The necessity for custom mixers to label feed by invoice, listing the names of each commercial feed in the mixture, each ingredient mixed into the feed if not a commercial feedstuff and if medications are added, the amount added with adequate warnings against misuses and adequate directions for use.

Pigloo Corp. Claims Patent Infringement

A farrowing unit described by Iowa State University as an "Iowa adaptation of a New Zealand farrowing unit" is claimed by the Pigloo Corp., Waukon, Iowa, to be an infringement of the corporation's U.S. Patent No. 2740379.

A picture and description of the Iowa unit, displayed at the annual agricultural engineering field day held at the university, appeared in July 18 issue of Feedstuffs.

Iowa State University authorities, notified about the alleged infringement by the Pigloo Corp.'s attorney, have replied that they have sent for a copy of the patent in question and would examine it carefully.

Others who may build farrowing units similar to the unit built at Iowa State apparently would face the risk of a possible suit for patent infringement.

Pigloo units, pre-fabricated for erection on farms by the Pigloo Corp., are sold by Nutrena Mills, Inc.

Broiler Operations Continue Behind Last Year's Pace

SALISBURY, MD. — There isn't much enthusiasm in the broiler industry. Sales and demand seem to be running behind last year's good prices and full broiler houses.

Hatcherymen across the nation last week in the 22 important broiler producing states set 38,643,000 eggs. This was 5% less than the previous week and 5% fewer than the same week a year ago. Settings were down in 17 of the 22 states. The sharpest declines were in Arkansas, Texas and Delaware.

Broiler chick placements in the 22 states totaled 30,082,000. This was 1% below the previous week and 4% below the corresponding week a year ago. Decreases were reported in 10 states. The largest decreases from the previous week occurred in Maryland, Arkansas and Alabama.

Although there was a slight increase in prices paid on the farm for chickens, it is well below the price paid a year ago. Delmarva growers received an average of 16.48¢ last week, compared to 16.36¢ the week before and 18.63¢ a year ago.

Marketings in Delmarva totaled 3,889,000 broilers during the week of Aug. 15. This was about the same as the previous week but 1% more than the corresponding week of 1958.

Dinner for Feed Men

CEDAR RAPIDS, IOWA—Wilson & Co., Inc., Cedar Rapids, is sponsoring a dinner Aug. 26 for feed industry representatives, according to George R. Coontz, manager of feed ingredient sales. The dinner will be served beginning at 6:15 p.m. at the Chamber of Commerce Building in Cedar Rapids. The company has reserved a special section for the Cedar Rapids-Fox Cities baseball game after the dinner.

Action Delayed on Cooperative Taxes

WASHINGTON—The House Ways and Means Committee has delayed all action on cooperative taxation for this session, it is noted in a bulletin from the Grain & Feed Dealers National Assn.

In an executive meeting recently, the committee considered the recommendations of the Treasury Department to tax cooperative corporations on patronage dividends if the dividends were not paid in cash or in qualified notes bearing 4% interest, and redeemable in three years, as it was noted in the bulletin.

Wilbur Mills, chairman of the committee, announced that the committee, "after discussion of the matter, concluded that it could not resolve the problems without further hearings in order to obtain the comments of the interested public on the Treasury Department proposal." He also stated that the committee tentatively agreed that public hearings would be held early in the next session of Congress, very probably in January, 1960, and that later this year an announcement would be made defining the scope of the hearings which will be conducted at the beginning of the next session of Congress.

Converting Plant

NEW YORK—Gilman Paper Co. has announced plans to construct a 300,000 sq. ft. modern converting plant in St. Marys, Ga., combining under one roof the multiwall bag plants, grocery bag plants and other converting operations of Kraft Bag Corp., a Gilman subsidiary.

Occupancy is expected to take place the latter part of this year. The new plant will have railroad facilities, with paper to be received from St. Marys Kraft Corp., a wholly owned subsidiary of Gilman Paper.

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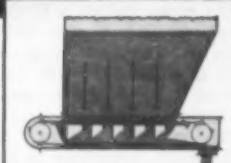

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Cornell Results Reported At Wisconsin Conference

By GEORGE L. GATES
Editor of Feedstuffs

MADISON, WIS.—Feed men from the dairy state of Wisconsin last week were brought up to date on results of a long range study of the effects of different levels of nutrition on dairy cattle being conducted at Cornell University.

Dr. J. K. Loosli of Cornell's animal husbandry department reported preliminary observations from the experiment at the Nutrition School for Feed Men held at the University of Wisconsin.

Wisconsin dairy husbandry department faculty members covered various aspects of dairy herd feeding and management. Dr. James W. Crowley discussed vitamin needs; Dr. H. J. Larsen described systems of summer feeding and Dr. L. H. Schultz reported on the relationship of feeding to ketosis in dairy cattle.

(A review of other discussions presented at the nutrition school appeared in the Aug. 15 issue of Feedstuffs, page 1.)

LEVELS OF NUTRITION: The Cornell tests, aimed at determining the influence of level of nutrition from birth until first calving upon lifetime production performance, were started in 1948 with a group of Holstein heifers. Additional calves were started on test until the total reached 102 head. Three levels of nutrition were compared — low, 65%; medium, 100%, and high, 140% of Morrison's TDN intakes.

"A high level of nutrition resulted in rapid growth, early sexual maturity and large mature size, but milk production tended to be lower than that of heifers fed for less rapid growth," Dr. Loosli said. "Marked underfeeding delayed growth and sexual maturity. With normal feeding after first calving, the stunted heifers milked well and grew to normal size by the second or third lactation. There were no important differences in number of services per conception among the feeding levels."

Milk and fat production was slightly higher in the first lactation for the heifers grown on the high level, he said, but in later lactations they gave less milk and butterfat and the lactation periods were shorter, as an average. (Production averages and other data are shown in the accompanying table.)

European Tests

In similar studies in Denmark and Sweden cows fed on a high plane of nutrition gave less milk and survived one to two lactations less than cows fed at a lower level, Dr. Loosli said.

All of the heifers in the Cornell experiment were bred starting at 18 months of age, a test procedure which leaves, according to Dr. Loosli, this unanswered question: "If we crowded them on growth with a high plane of nutrition and bred them earlier, what would happen?" He said he didn't know but he believes that it is possible there would not be the drop in production noted in the current tests.

The Cornell scientist said it is too early to make extreme recommendations as a result of the experiment to date (it still has five or six years to run), but he suggested this program: Good feeding of calves up to a year, some easing up of the plane of nutrition from then to maturity and a return again to higher feeding levels.

VITAMIN NEEDS: "Dairy cottle are able to provide many of their nutrient needs via the microflora of the rumen," Dr. Crowley said. "Fatty acids, amino acids and B vitamins are synthesized in the rumen. Therefore a feed requirement for the B vitamins does not exist.

"Under practical Wisconsin conditions the feeds furnish the other vitamins or their precursors in adequate amounts. Vitamin A and vitamin D may be a problem in dairy nutrition under special conditions."

He noted that special attention should be given to the A and D content of the feeds for young calves when milk replacers or calf starters are used as a substitute for whole milk. Forage crops, he said, when fed in the usual manner, provide vitamins A and D to older calves, heifers and mature cows. "However, unusual forage feeding programs or feeding of very poor quality forages for extended periods may cause vitamin deficiencies, and it is necessary that persons following unusual programs make sure that adequate vitamins A and D are provided."

The standard recommendation for total daily allowance is 4 to 6 mg. of carotene per 100 lb. of body weight, he said, and the usual recommendation for vitamin D for dairy cattle is 300 I.U. per 100 lb. of body weight.

SYSTEMS OF SUMMER FEEDING: Preliminary results of a project comparing strip grazing, green feeding and feeding of stored hay and silage were reported by Dr. Larsen. The tests, started in 1955, are to run at least eight years.

The level of milk production on any one of the systems has been relatively high, which indicates that good milk flow can be maintained under any one of the three systems if good management practices are followed, Dr. Larsen said.

"The milk produced per acre has shown consistent differences in favor of green feeding over strip grazing," he said. "The cows on stored feeding produced the most milk per acre; however, more grain was required to maintain about the same level of milk production as those on the other systems."

RELATIONSHIP OF FEEDING TO KETOSIS: Dr. Schultz described ketosis in dairy cattle as a metabolic disorder occurring shortly after calving in high producing cows. The cow goes off feed, declines in production and loses weight. There is a decrease in blood sugar and an increase in ketones in the blood, urine and milk. It is most serious in the heavily-fed, high-producing herd, but a type of underfeeding ketosis may oc-

(Turn to WISCONSIN, page 81)

Body Weight and Production of the Cow

Level	Services per conception	—Body weight of— Cows* (lb.)	Calves (lb.)	——Production of—— Milk (lb.)	Fat (lb.)
First calving:					
Low	1.55	969	81	8,840	329
Medium	1.41	1,188	85	9,083	343
High	1.48	1,353	90	9,226	354
Second calving:					
Low	1.71	1,379	93	10,450	390
Medium	1.76	1,442	99	10,450	398
High	2.09	1,544	99	9,752	372
Fifth calving:					
Low	2.00	1,604	100	13,225	483
Medium	2.29	1,615	92	12,966	491
High	1.76	1,727	97	10,887	401

*Before calving.

Lorne Van Stone Joins Salt Firm

HOUSTON — Lorne F. Van Stone has resigned as president and general manager of Uncle Johnny Mills, Houston, to become executive vice president and general manager of the United Salt Corp. of Houston, according to an announcement this week by Lloyd P. Webre, chairman of the board of United Salt. Mr. Van Stone assumed his new duties Aug. 17.

"No stranger to the food, feed, bakery and chemical businesses wherein salt is an essential commodity, Mr. Van Stone is uniquely qualified to assume his new duties with United Salt," said Mr. Webre.

Mr. Van Stone had been associated with Uncle Johnny Mills from its organization, and he has been very active in feed industry affairs as well as in other business and civic activities. He recently was reelected to the boards of the American Feed Manufacturers Assn. and the Midwest Feed Manufacturers Assn. He also is a member of the Midwest executive committee and of the public relations and service committees of the AFMA. He twice has been president of the Texas Feed Manufacturers Assn. He also has been active in many Houston and Texas business and civic and other groups.

"In order to induce Mr. Van Stone to accept this position with us, especially created, our board of directors and stockholders made it possible for him to become a substantial stockholder," said Mr. Webre.

Mr. Van Stone started his business career at an early age in his father's grocery store in Houston and since continued in this and allied fields. Earlier in his career he was a bakery specialist.

Colorado Egg Group Organized

By T. E. HARTUNG
Colorado Extension Poultryman

DENVER—The Producers Marketing Assn. was officially formed on the evening of Aug. 17 in Denver. A nucleus of somewhat over 25 egg producers gave favorable action to the formation of this marketing association under the Colorado Cooperative Marketing Act.

The formation of this association was previewed a number of months in advance to the actual formation date. This preview included special committee meetings by egg producers and special producer meetings at which various marketing alternatives were considered. Finally, as a result of this study, on June 16 a special producers steering committee recommended the formation of the Producers Marketing Assn.

It was recommended that between that date and Aug. 1 an attempt would be made to sign up a target volume of 1,000 cases of eggs per week. In turn, since that time producers have been contacted. The overall result has come up with a sign-up of 60,000 birds or approximately a 600 case supply per week, centered primarily in a 75-mile radius around Denver. Under the agreement originally set up, unless the 1,000 case supply was reached a special meeting would have to be held to get the action of those who did sign up. This was the purpose of the Aug. 17 meeting.

The first step, which is now under way, is the drawing up of the actual constitution and by-laws of the Pro-

(Turn to COLORADO, page 77)

CAPITAL COMMENT

BY JOHN CIPPERLY

Oil Exports

WASHINGTON — The mandatory barter provision contained in the House Agriculture Committee bill to extend Public Law 480 died this week when northeastern Democrats arose during the debate to utter unsuspected opposition to the proposals advanced by House Agriculture Committee chairman Harold Cooley of North Carolina.

But even of the Cooley mandatory barter had been approved in the House, it would have been defeated by a stern opposition in the Senate. Also, USDA had prepared even more stringent restrictions on barter than those now in effect.

As the debate on the PL 480 extension bill arose, it is known that southern supporters of Congressman Cooley made urgent pleas to USDA officials to request some compromise wherein the barter contractors might be assured some margin on their sales in exchange for U.S. surplus commodities. One proposal was that USDA should agree to a 2% elbow room margin on grains in exchanges between the imported commodities and USDA surplus exports. This would have amounted to approximately 4¢ per bu. on wheat.

The offers from the barter advocates were based on another compromise wherein barter import offers would be placed on a bid-and-offer basis, rather than the current deal wherein General Services Agency places its buying price on assayed value of such imports as diamonds and other metals.

Also going down the dirty laundry chute was the proposal to ban federal inspection of U.S. grain exports at Canadian ports by denying funds for payment of U.S. federal grain inspectors for certification of U.S. grain grades under Title I of PL 480.

The fight on Canadian inspection is a hangover from the day Congress approved the Canadian Seaway. At this time the Atlantic and Gulf Coast interests feared a large loss of export business to the seaway ports, and have concentrated their opposition on the Canadian origin inspection as an abuse of the U.S. Grain Standards Act which did not provide for such U.S. official inspections outside the U.S. continental territory. Many weeks ago USDA had notified U.S. exporters that it would provide U.S. grain inspectors for such service.

The annoying issue is that USDA acted arbitrarily when it rejected the proposal of the Buffalo Corn Exchange, which would have made available under its auspices the services of licensed U.S. grain inspectors under the supervision of USDA federal inspectors for the movement of U.S. grain exports under PL 480, Title I.

The House passed its version of PL 480 extension for a one-year period, carrying an authorization of $1.5 billion. It may now be expected that the Senate will quickly act on

(Turn to CAPITAL COMMENT, page 81)

"We congratulate our dealers and salesmen on this year's excellent increase in tonnage,"

says **COLIN S. GORDON,** *Executive Vice President of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*

COLIN S. GORDON joined The Quaker Oats Company in 1927 in Akron. Coming up through the ranks of the Grain Division, he was named Executive Vice President in 1952. "Chi" served in Washington as Director of Food Division of OPA in 1944, and is a leader in several farm and civic organizations.

"I join the other officers of The Quaker Oats Company in praise of the fine team effort on Ful-O-Pep Feeds this year. You have proved you can profit from Quaker's aggressive program to seize today's big new opportunities in the feed business.

"As we've told you, feed is important to us. And we have plans to continue to expand in this fast growing business. It is already a three and a half billion dollar industry, and we foresee sales increasing over 50% by 1970.

"To take advantage of this tremendous growth potential, we have the quality products, the modern research, the expanding facilities. And Ful-O-Pep's percentage increase for the past 12 months, which is about double the industry's increase, is evidence that we have the people who want to grow.

"More plans are developing to make our feed business an even greater part of The Quaker Oats Company. Present dealers and new dealers, who have the same aggressive spirit, have more and more opportunity to benefit from Quaker's expanding program."

Colin S. Gordon

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Broiler Trends in the Southern States

"No one makes money at present prices, but the good manager can hang on longer . . . and will cash in on high profits when broiler prices do rise."

By Jess F. Blair
Feedstuffs Special Writer

The broiler industry in some of the southern states, as is well known, has reached a point of efficiency seldom matched in livestock and general farming areas. In most cases, this has been brought about by low prices, which forced producers to adopt better methods, or quit the business.

It has been a survival of the fittest, and the inefficient, loosely-managed projects have long ago failed. Only the top producers survive, and these are striving to find new ways of reducing expenses in order to shave off a fraction of a cent per bird in production costs.

The above statements are results of impressions gained during a trip of several weeks through sections of Mississippi, Alabama, Georgia and Arkansas where millions of broilers are being grown, and to lighter production areas in Tennessee and Oklahoma.

Trouble is "Price"

I talked to feed dealers, hatcherymen, processors, farmers and to various poultry specialists, businessmen and even the truckers and mill hands. Everybody seems to have an idea of what's wrong with the broiler industry, but mostly it comes down to price. There is nothing wrong that a steady 18-20¢ market would not cure.

One thing readily apparent is that broiler growing is usually confined to a few small areas, with no relationship to the size of town, type of farming or distance from markets.

In Mississippi, for instance, a sizeable per cent of the state's broilers are grown around three or four small cities in one area. In Arkansas, one finds hundreds of thousands of chickens around a small town, then there won't be another broiler house for 50-100 miles.

Reasons for Concentration

"Broilers are not like cattle or cotton," said a producer in Alabama. "Chickens can be grown anywhere. And after one man starts, others come into it. A new producer can operate more easily in an established area because of the proximity to hatcheries and processing plants. Also, swapping ideas with other growers will teach him a lot."

This ease of getting started has been the main cause of over-production, most dealers say. All a man needs is capital. Houses in this warm climate are relatively cheap and can be built of native lumber. Hatcheries are looking for new business, as are the large feed companies. Farmers are also in need of extra income, so the dealers can, within a few months, have 100,000 birds out on feed, and be ready to harvest the crop in from nine to 10 weeks.

Despite low prices and a clouded future for broilers, it appeared that none of the large integrators were quitting. A few feed dealers with a more diversified business have quit, while new ones take their places. A Tennessee feed dealer called a halt after two years, and is now promoting other projects.

Most integrators, particularly those who were in the feed business at the beginning, are looking for other feed outlets. In Mississippi, a dealer had recently started a swine project. He was furnishing 200 sows on a contract basis.

"I needed a monthly income for feed," he said. "After we get 1,500-2,000 hogs on feed, I'll have enough money coming in to offset the broilers, where I am now making no profit at all."

An Alabama dealer was likewise promoting other feed sales, particularly with turkeys and hogs. In Georgia a dealer had added laying hens to his broiler operations, in hopes they would bring in a more steady income.

Another factor in the broiler picture is the small independent producer. Some of the farm associations have hatcheries and feed mills, and furnish birds and feed to farmers who grow laying hens and broilers. Many of these producers have quit, however, because the margin of profit is too low.

A farm association manager in Arkansas said the small producer was being squeezed out. "If a big producer makes even 1¢ a bird net, he probably wouldn't lose anything on a million birds. But a small farmer with 10,000 broilers would be forced out."

This man predicted that within a few years there would be fewer but larger broiler growers. However, this opinion is not held by everyone in the industry.

"I've got 10,000 broilers on feed now," said an Alabama dealer, "and that's as many as I want. We've decided to work on other types of feeding, or at least make a start. Then we'll concentrate on whatever looks best. A man with three million birds can't possibly promote anything else to keep his mill and trucks busy."

Many experts do agree that broilers will be concentrated mostly in certain areas, no matter how many are raised. Dealers in new places have a more difficult time getting started.

An Oklahoma feed mill owner once fed several hundred thousand birds but has none now. He said the town was too far from the main producing area in northwestern Arkansas and southwestern Missouri. He could not command a market as high, and there was no up-to-date processing plant near.

Effects of Auctions

One result of low prices has been the creation of broiler auctions. There are now several of these in southern states. All are run similarly, with buyers bidding on birds in lots of from about 2,000 on up.

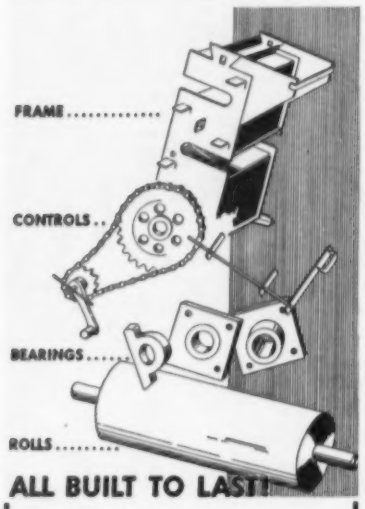
Most producers are highly in favor of the auctions, though a few processors have been lukewarm in their support.

Even some of the growers were not sure the auction would solve all problems. At a recent one in Springdale, Ark., the bidding was consistently less than 16¢ lb. Only a part of the growers sold for this price.

The auction manager, Henry Thomason, said that prices had been higher than where producers made individual sales to processors, and that this had amounted to nearly $23,000

S. D. Formica

NUTRITION POST — The appointment of S. D. (Sandy) Formica to its technical service department staff as nutritionist has been announced by Dawe's Laboratories, Inc., Chicago. In his new job Mr. Formica will provide feed formulation and other technical services to feed manufacturers using Dawe's products. He is a 1947 Purdue University agriculture graduate, and a year later received an M. S. degree in nutritional science from Cornell University. Mr. Formica specialized in dog and animal feeds as a nutritionist for Swift & Co., Chicago, and later became a partner in a feed manufacturing business in Highland, Ill. Before joining Dawe's, he was a nutritionist with Ultra-Life Laboratories.



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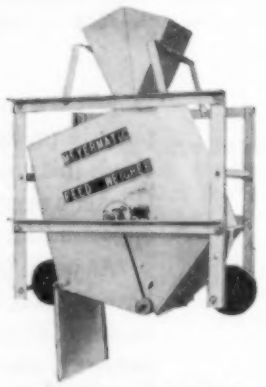

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in two weeks' time. However, he said not enough producers were selling by auction, and that at least one third of them should be selling there to make a success. Thus far, considerably less than one third had sold birds there.

In arguing the advantages of certain areas for growing broilers, such things as winter fuel costs, access to markets and types of feeds are mentioned.

A grower near the Arkansas-Missouri line says he has 1¢ lb. advantage over southeastern producers because of the nearby markets of Kansas City, St. Louis and other large cities.

A Mississippi dealer says housing in his area is cheaper, and also very little heat is needed in winter. Several Arkansas dealers in the Ozarks admit that heating the houses in winter raises production costs by 1¢ lb.

After hearing all the arguments, it appears that no one area has much advantage over another. All areas have plenty of labor, highway and rail facilities. Most of the feed is shipped in and the dressed birds shipped out.

"The whole thing can be summed up in two words," said a feed dealer in Georgia, "they are 'management' and 'price.' No one makes money at present prices, but the good manager can hang on longer. He has streamlined operations and is getting a better feed conversion. He is always looking for some way to grow a bird at a fraction of a cent less, if low prices take out a lot of operators, the best-managed firms will be the ones to cash in on high profits when prices do rise."

Canada Hog Numbers Are Up 11% From 1958

OTTAWA—The number of hogs on Canadian farms June 1 this year was estimated at 6,872,000, up 11% from the 6,164,000 total June 1, 1958, according to figures released by the Dominion Bureau of Statistics.

In the east, the number advanced 20%, from 3,057,000 to 3,674,000. In the west, the number advanced 3%, from 3,107,000 to 3,198,000.

This year's spring (December to May) pig crop was estimated at 5,318,000, up 11% from last year's total of 4,787,000. The eastern total increased 22%, from 2,468,000 to 3,007,000, and the western total remained almost unchanged at 2,311,000, compared with 2,319,000 last year.

Total spring farrowings advanced from 623,600 to 704,400. This compares with the jump from 320,600 to 392,200 in eastern Canada and the jump from 303,000 to 312,200 in western Canada.

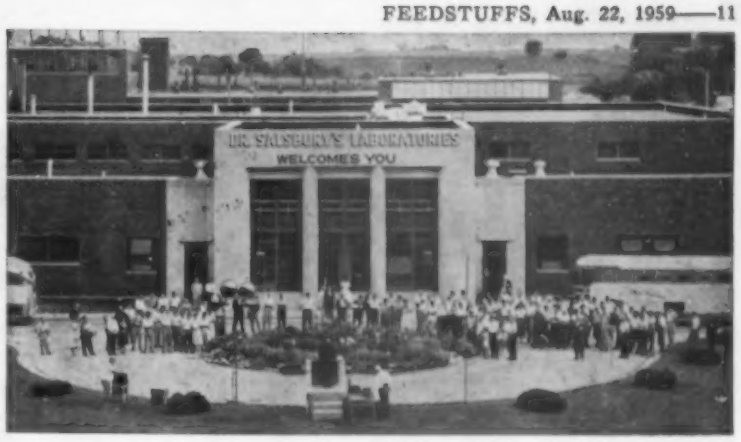
Summer farrowings (June to August) were placed at 376,500, up 12% from the year earlier total of 337,200. Farrowings are expected to increase from 184,200 to 210,000 in the east and from 153,000 to 166,500 in the west.

These data indicate that fall farrowings (September to November) may be 5% smaller than a year earlier in eastern Canada and 17% smaller in western Canada, according to the Dominion Bureau of Statistics.

Albers Man Promoted

HILLSBORO, ORE.—David Miller, an employee of the local Albers Milling Co. plant for the past 19 years, has been promoted to superintendent to succeed W. R. Lacy, who was recently named superintendent of the firm's Seattle plant.

Mr. Miller is a Hastings Business College graduate, while Mr. Lacy graduated from the University of California.



LABORATORY TOUR—Shown is part of the group of 150 Poultry Science Assn. members who toured Dr. Salsbury's Laboratories at Charles City, Iowa, recently. The association was meeting at Iowa State University. Welcoming the group is Dr. John G. Salsbury, vice president and general manager of the firm. Dr. J. E. Salsbury, president, telephoned from Edinburgh, Scotland, where he was vacationing, and his greetings were amplified to the group. After an evening chicken-que at Charles City's Wildwood Park the group returned to Iowa State.

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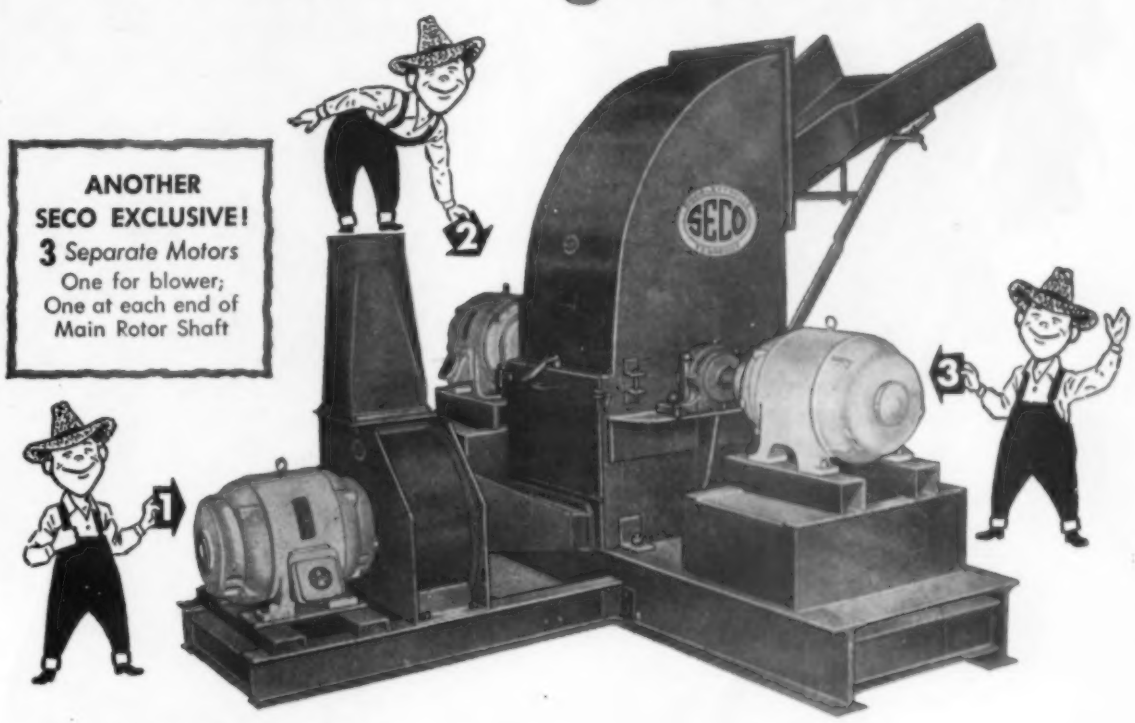

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And – Baciferm can be added to each ton of your feed at $2 to $4 less than the tetracyclines.

1. Bird, H. R.: Coming Events in Poultry Nutrition. Hatchery & Feed, July, 1958.
2. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, in press.
3. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.

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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Trace Minerals and Salt Mixtures

A question from California asks regarding the specifications for "Trace Mineralized Salt." This term or similar terms such as "salt with trace minerals added" are applied to salt products containing nutritionally significant amounts of trace minerals recognized as essential for the species of animals for which they are intended. Presently these include iodine, cobalt, manganese, copper, iron, and zinc. They should be present in the minimum amounts given in the following table.

Requirements for Trace Minerals in a Trace Mineral Salt

Element	Requirement (percent)
Iodine	0.007
Cobalt	0.01
Manganese	0.24
Copper	0.02
Iron	0.2
Zinc	0.005

The term "trace mineralized" was introduced about 1950. Although the idea may have originated elsewhere, it received impetus from work in Wisconsin. Zinc was not in the original specifications but is presently common to most such products.

The Association of American Feed Control Officials has traditionally avoided defining "mixtures." It is for this reason that the above specifications do not appear in the annual publication of this association. If, however, "trace mineralized" is to be meaningful, there must be some agreement as to the application of the term. The above requirements were therefore developed and agreed upon and are applied by most feed officials.

Recognition of the name "trace mineralized salt" by the association will be found on page 17 of the 1959 publication as follows:

"The term 'mineralized' shall not be used in the name of a feed except 'Trace Mineralized Salt.' When so used, the product must contain significant amounts of trace minerals which are recognized as essential for animal nutrition."

Preference is expressed by control officials for listing these items on labels in the order given above.

Registration Changes

With the passage of the mid-year, a reminder is in order regarding changes in registration. Most if not all states permit changes under certain conditions during a registration year. Some "changes," however, call for registration as a new and different product.

Dropping a drug as an ingredient is perhaps the most notable in this category. Without question this changes the character of the feed. The resulting product differs from the original one; therefore, a new registration is necessary.

Minor changes may be allowed in ingredient listings. The guiding principle here is stated in Section 4, paragraph (c) of the Model Feed Bill as follows:

"Changes in the guarantee of either chemical or ingredient composition of a registered commercial feed may be permitted provided there is satisfactory evidence that such changes would not result in a lowering of the feeding value of the product for the purpose for which designed."

Dried Rumen Bacteria

As use of "rumen" products become more common, a slight modification in nomenclature has been suggested. "Rumen Organism" has been used and is correct in referring to what might be termed the raw product before processing. Most "rumen" however is dried as a feed ingredient. In the "raw" state, "organism" properly refers to two items, protozoa and bacteria. Drying destroys the protozoa and the bacteria remain. The term "bacteria" should be used instead of "organism."

CAPACITY INCREASED

ROLFE, IOWA—The Climax Grain & Feed Co. here recently increased its grain storage capacity to 170,000 bu. Leroy H. Schoon, Pocahontas, Iowa, has been appointed assistant manager of the firm, and will assume his new duties Sept. 1. He was formerly employed by the Farmers Cooperative Co., Pocahontas. Mr. and Mrs. H. I. Wickre own the Rolfe company.

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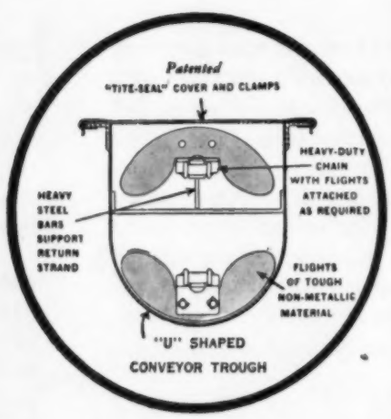
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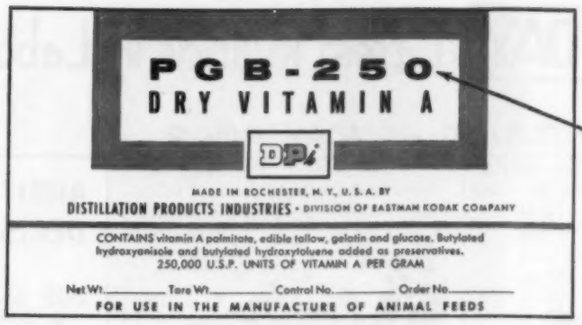
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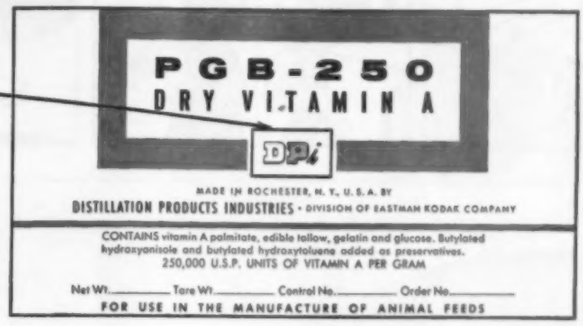
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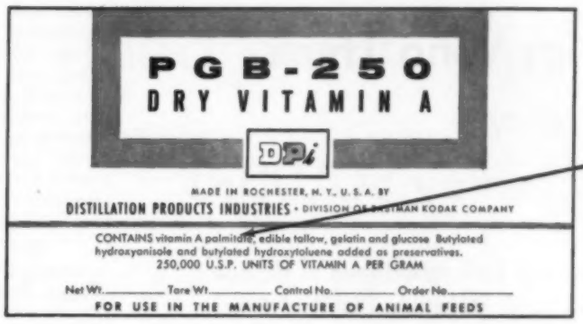
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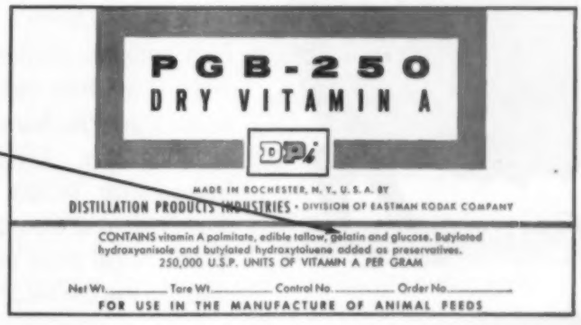
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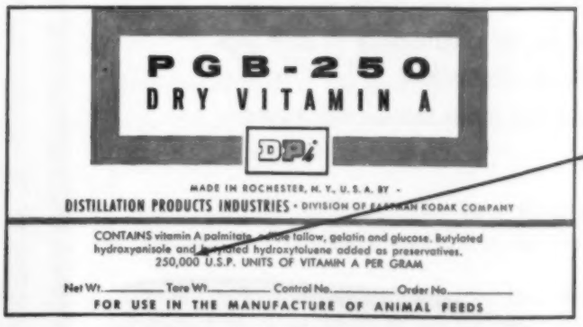
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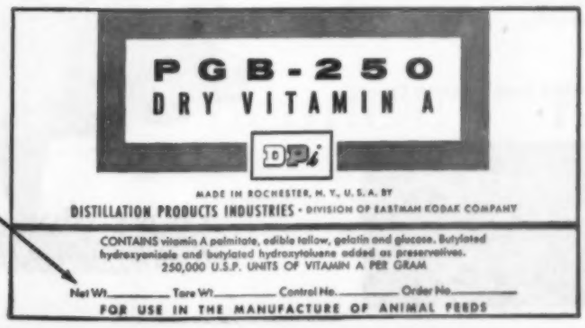
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MISS JONES DIDN'T WORK FOR WEEKS BEFORE JULY 4th.
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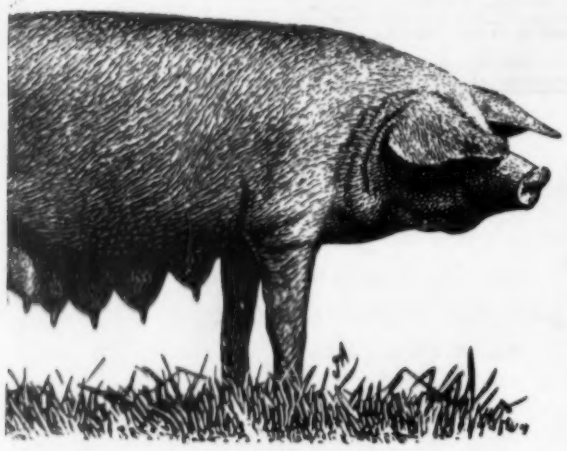
Based on a 1959 California Decision



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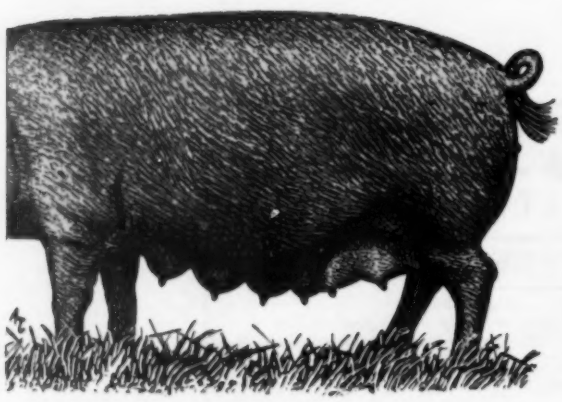

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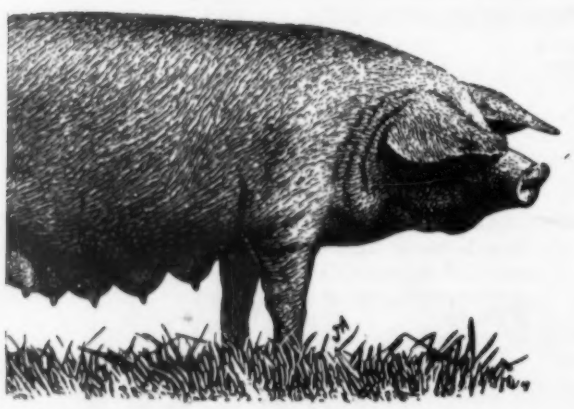

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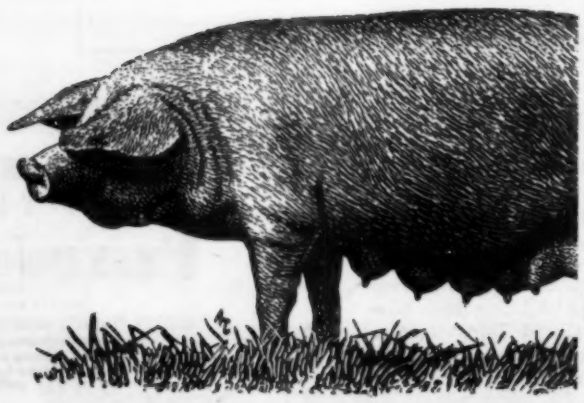

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Feed Firm Organized

MALTA, MONT.—Phil-Co. Feeds, Inc., has been incorporated with capital stock of $300,000 by Ivan Blatter, Sanford Barrett and Henry Nesbit. The firm will build a pellet and steam roller mill and operate the present facilities of the Phillips County Marketing Assn. (seed house). If sufficient stock is sold immediately, the mill will be in operation this fall. The seed business of the marketing association will be continued. The pellet and rolling mill will cost between $180,000 and $190,000, it is estimated.

HOUSTON FIRM SOLD

HOUSTON, MO.—McCaskill & Son, Houston feed company, has been sold to Rowland H. Amelon, Houston, Clarence M. McCaskill announced recently. Mr. Amelon has already assumed operation of the facility. He formerly owned half interest in a feed company at Lockwood, Mo.

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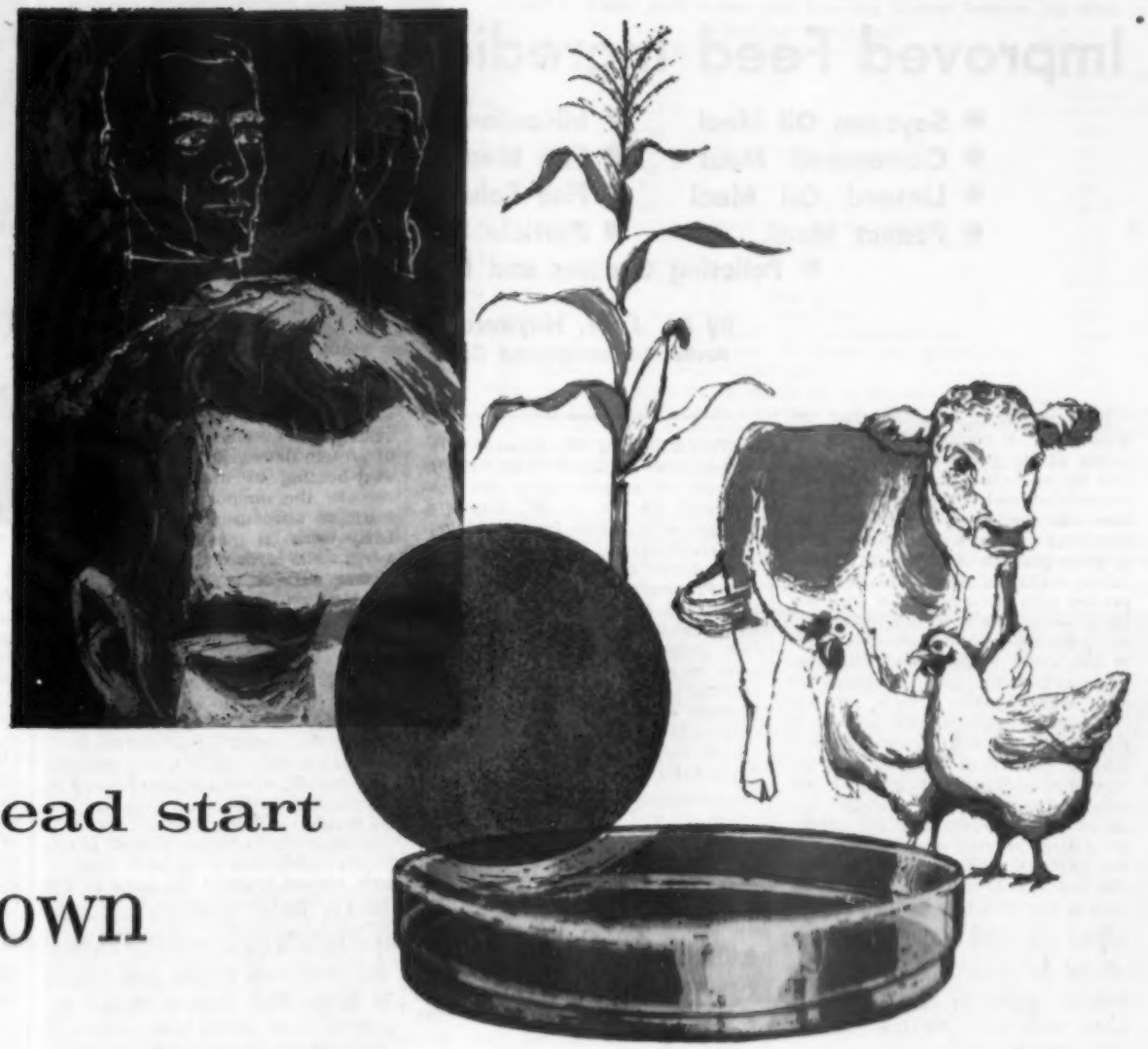

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By Dr. J. W. Hayward
Archer-Daniels-Midland Co.

Dr. J. W. Hayward

EDITOR'S NOTE: Extensive information on various feed ingredients and effects of processing has been reviewed by Dr. J. W. Hayward, director of nutrition for the Archer-Daniels-Midland Co., Minneapolis. The subject "Improved Feed Ingredient Processing" was discussed and illustrated by Dr. Hayward at the International Animal Feed Symposium, sponsored by the U.S. Department of Agriculture's Foreign Agricultural Service and the Soybean Council of America, Inc., in Washington, D.C., May 4-6, 1959. The accompanying article is the text of his presentation at the symposium.

It is generally expected that the quality of a compounded feed, in terms of its potential performance, will be no better—even if skillfully formulated and adequately mixed—than the quality of the separate ingredients used in its manufacture. It is quite possible, by the use of published tables of analytical data, to predict with some degree of accuracy likely deviations in feeding quality of many ingredients, such as most of the grains, grain by-products, roughages and the like. By having available for each representative sample such information as unit weight, percent of damaged material, percent foreign matter, content of fiber, protein and moisture, additional accuracy is possible in predicting the potential value of a feed mixture. Since grains, as well as several other ingredients, can go out of condition during storage, the practice prevails in many markets of appropriately labeling or identifying damaged commodities when offered for sale. The following are familiar qualifying labels—bin damaged, field damaged, fire damaged and water damaged.

In addition to dealing with ingredient quality as a result of processing such things as oilseed meals, fish meals, condensed fish solubles, meat meals and the like, I intend to devote a few paragraphs of this presentation to the effect of particle size as a result of grinding on the feeding value of ingredients such as grains, grasses and hays. I will also include a brief report on the effect of pelleting and of making wafers of grasses and legumes upon their value as a feedstuff.

Cause of Quality Variance

Undoubtedly, one of our most variable ingredients, in terms of potential performance in feeds, comes under the heading of "protein sources." These products can vary considerably due to the source or quality of the raw material used in producing them. However, one of the most common causes of quality variance is heat—either too much or too little.

Heat applied to feed or food materials may have good or bad effects. If applied properly, heat removes moisture safely, thus reducing the risk of spoilage by fermentation or enzymatic action and the like during storage. Use of the proper amount of heat during processing is known to be very beneficial to the biological value of the proteins of soybean products, such as soybean oil meal. A few other legumes, such as navy beans and the like, are similarly affected but soybean oil meal interests us most because of its availability in the U.S. and its world-wide importance as a potential source of good protein.

Excess heat during processing can be detrimental to all of our commonly used protein meals, such as fish meal, meat meal, dried milk products, cottonseed meal, sesame meal and even soybean oil meal. The questionable feature about this effect of heat—either good or bad—on these protein meals is that in most cases there isn't any satisfactory method available for quickly detecting protein improvement or damage in the case of soybean oil meal, or for detecting protein damage as in fish meal and many other proteins. The only sure way of determining the biological value of these proteins is to subject each meal to a protein bio-assay. Unlike the marketing of grains and grain by-products, we have never heard of a supplier publicly announcing an over-heated protein ingredient for sale, nor did we ever hear of a soybean processor labeling his meal as underheated for good protein nutrition of young poultry and pigs. Yet there has been a considerable tonnage of protein sold over the years that was quite inferior because of improper heat treatment during processing.

Back in the 1920's and early 1930's several investigators working independently found that when certain food materials, such as casein, cereals and fish meals were exposed to high temperatures, a decided decrease in the nutritive value of the protein resulted. Flame-dried fish meals (temperature 400-600° F. for 30 minutes) were always found to have a lower biological value than the low temperature steam and vacuum dried meals. In most instances, a decrease in the protein efficiency of fish meal due to over-heating was thought to be due to damage to the amino acids—lysine, arginine and cystine. This work was done before the role and importance of methionine was generaly recognized. That is the reason why methionine was not mentioned in this early work as one of the limiting amino acids due to over-heating. In instances of protein damage resulting from the over-heating of milk products and cereals, the amino acids lysine and histidine were usually affected. This early work on the effect of heat is very well covered in a review by Fixsen (8).

Attention is invited to Table 1 which gives the content of a few of the important amino acids found in various feed ingredients. Even though corn is the only grain protein listed in this table, I think it serves very well to illustrate that grain proteins and grain cereal by-products, as a whole, are very low in lysine content. The protein of corn is also limited in tryptophan content and is rather low in cystine and methionine. You will see that the various oilseed meals vary considerably in lysine, with properly cooked soybean oil meal at the head of the list of plant-type proteins in respect to lysine content. Fish meal and meat meal can be good sources of lysine. Fish meal is usually the best of these animal-type proteins in tryptophan, cystine and methionine—at least better than most meat meals currently available on the market. However, it is well to keep in mind that lysine is ordinarily one of the amino acids most vulnerable to damage by over-heating. Methionine and cystine are usually next in order. It is evident that we do need proteins rich in lysine to balance the proteins of grain in critical rations. If appropriate raw materials are used in producing animal-type protein meals, including fish meals, they will usually show a good content of available lysine, provided the meals are not heat damaged during processing.

A very good review of various aspects of processed plant proteins is given by numerous authors in the following book: "Processed Plant Protein Foodstuffs," edited by Aaron M. Altschul (1). A good reference covering subjects confined entirely to soybeans is "Soybeans and Soybean Products"—Volume I and Volume II, edited by Klare S. Markley (12). Incidentally, I have a contribution in Volume II of "Soybeans and Soybean Products" (12), entitled "Soybean Oil Meal for Livestock and Poultry"—Chapter XXII, Pages 891-947.

SOYBEAN OIL MEAL

Effect of Heat: Soybean oil meal contains an excellent protein as to quantity and on the basis of kind and amount of essential amino acids, provided it is properly cooked during processing. There is a considerable amount of published data showing the effect of cooking upon the protein efficiency of soybean oil meal. Data have been chosen, which you will find in Table 2 (Effect of Cooking on Protein Efficiency of Soybean Products), as the most suitable in this instance because the soya products used here represent a series made at the same time in one processing plant (continuous solvent extraction) with the treatment purposely varied from raw or as-is (in raw soybeans) through different degrees of heating or cooking until an excess was reached, labeled as "over-heated." Soybean Sample No. 4, identified as Properly Cooked, contained moisture in excess of 18% in flake form after de-fatting and before, as well as during, cooking. All the cooking of these soya products (Samples 3, 4 and 5) was done in atmospheric cookers that were steam jacketed. Both live steam and atomized moisture were injected inside of the cookers. The best meal, or Sample No. 4, was cooked for some 60 minutes at a temperature not over 220° F.

You will note that the raw soybeans and improperly cooked soybean oil meal had a low relative protein efficiency. Over-heating reduced the protein efficiency as compared to the optimum cooked meal (Sample No. 4). Please note the changes in water dispersible protein and urease activity. These are fairly typical values for soybean oil meals cooked in atmospheric cookers. We find a pretty good correlation between such things as water dispersability of protein, urease (measured by increase in pH), thiamine, water absorption and color for soybean oil meals processed day in and day out in the same plant with equipment operating as uniformly as possible each day. The same cannot be said of meals of unknown processing history. It is also true in most instances that one cannot use the same analytical criteria developed for one processing plant as policing tools for good meal in another soybean plant, even though identical equipment is used in both plants.

Table 3 contains some pertinent data from our amino acid studies with raw and cooked soybean oil meal conducted back in 1949, using standardized young male white rats as our experimental animals. Our protein assay diet was adjusted to 18% of protein. The feed intake was

TABLE 1. Amino Acid Content (%) of Various Feed Ingredients

Ingredient	Protein (%)*	Lysine	Tryptophan	Cystine	Methionine
Corn	9.0	0.3	0.10	0.16	0.18
Soybean Oil Meal	45.0	3.2	0.58	0.66	0.67
Cottonseed Meal	43.0	1.8	0.52	0.86	0.65
Linseed Oil Meal	35.0	1.2	0.56	0.66	0.60
Peanut Meal	44.0	1.4	0.48	0.70	0.44
Corn Gluten Meal	42.0	0.7	0.21	0.76	0.84
Meat Scraps	50.0	3.1	0.35	0.60	0.65
Fish Meal	60.0	5.7	0.84	0.90	1.62
Skimmilk (dried)	35.0	2.5	0.45	0.42	1.05

*Kjeldahl N x 6.25

(Ref.: "Amino Acid Handbook—Methods & Results of Protein Analysis," by Richard J. Block, Ph.D., pp. 296-297, published by Chas. C. Thomas, Springfield, Ill.)

TABLE 2. Effect of Cooking on Protein Efficiency of Soya Products

Soya Sample No.	Protein Source	Identity of Soya Products	Relative Protein Efficiency (Milk=100%)	Water Dispersible Protein (%)	Urease increase in pH
	Skimmilk	Control	100		
1	Soya	Soybeans (Raw)	30	76.4	1.90
2	Soya	Soybean Oil Meal (unheated)	36	76.2	1.80
3	Soya	Soybean Oil Meal (mildly heated)	70	41.6	0.75
4	Soya	Soybean Oil Meal (properly cooked)	89	14.2	0.20
5	Soya	Soybean Oil Meal (over-heated)	81	5.1	0.05

These rat assay results summarize a 56-day test using 5 male albino rats of the Sprague-Dawley strain per lot. The protein in all of the diets was equalized at a 10% level. The diets used were a purified type with all the protein supplied by the products indicated in the column titled "Protein Source."

equalized and this study ran for 42 days. In Lots 2 through 7, the soybean material was unheated defatted soybean oil meal. For Lots 8 through 13, this same raw meal was cooked by autoclaving in the laboratory at 15 lb. pressure for about 12 minutes. The soybean oil meal fed to Lot 14 was our regular daily production of commercial meal made at our continuous solvent extraction soybean plant operating then at Chicago, Ill.

You will see from these studies that the addition of 0.3% of DL methionine to Lot 5 corrected the only deficiency apparent in the raw, unheated soybeans. At least the performance in terms of protein efficiency was the same from adding methionine as was obtained by cooking the soybeans, as in Lot 8. The amino acids used in this study, with levels indicated, were as follows:

L Lysine	0.5%
DL Methionine	0.3%
DL Tryptophan	0.1%
DL Histidine	0.2%
DL Phenylalanine	0.3%
DL Leucine	0.4%
DL Isoleucine	0.2%
DL Threonine	0.3%
DL Valine	0.3%
L Arginine	0.1%

No other amino acid in the list of 10 considered to be essential, except methionine, corrected the nutritional deficiency in the raw soybean oil meal. It is also interesting to note that raw meal plus methionine, as in Lot 5, and the laboratory cooked meal fed to Lot 8, as well as Lot 11 receiving the cooked meal and methionine, are, for all practical purposes, identical in protein efficiency and equal to the commercial meal fed to Lot 14. You will see, also, that several of the lots in this study were equal in protein efficiency, or slightly superior, to the control lot (Lot 1) fed dried skimmilk as the sole source of dietary protein. Incidentally, the amount of soybean oil meal used (as sole source of protein) was 37.5% in each soybean diet fed in this amino acid study of ours (Prob. B212.6).

We interpret these results from our amino acid studies, as well as other similar results which we have obtained many times, to mean that raw or insufficiently cooked soybean oil meal has an impaired protein efficiency or impaired feeding value in terms of growth potential because one or more of the essential amino acids, presumably methionine and/or cystine, are at least partially unavailable to the animal during its normal digestion and assimilation period. We also conclude that these data disprove the theory that a number of investigators have advanced over the past several years—that soybean contains, in its raw state, toxic or inhibiting factors. Experimental work, apparently substantiating or refuting the toxicity or inhibitor theory, is excellently reviewed by Liener (11). Our stand on this subject, as well as the belief of several others, is expressed and confirmed in a rather recent report by Borchers (5).

Another factor which has improved soybean oil meal, as a result of extensive research in processing methods, has been the development of a dehulled, properly cooked soybean oil meal. This dehulled meal is commonly known in the industry as 50% soya. It analyzes 50% protein or better, and about 3% fiber, as contrasted to 44 to 45% protein and some 7% fiber for the regular full-fiber 44% solvent-extracted soybean oil meal. The 50% meal has become very popular in the U.S. for use in high-energy broiler and high-energy laying feeds. In several feeding tests with chicken broilers, we found that, on an average, the 50% soya was worth in excess of $60.00 per ton more than the full-fiber 44% soybean oil meal, on the basis of the extra pounds of broiler meat produced by the ration containing the 50% meal. From recent experiments at Cornell University it was reported by Hill and Renner (10) that the metabolizable energy of the 50% soya was 1150 and the 44% meal was 1020 calories per pound.

This seems to be about as appropriate a place as any to mention that according to a considerable amount of experimental work and practical application here and abroad, especially in Germany (Province of Duren), trichloroethylene is definitely not a safe solvent to be used for processing soybeans. Trichloroethylene-extracted

TABLE 3. Amino Acid Studies with Raw and Cooked Soybean Oil Meal

A-D-M Prob. B212.6, 1949

(White Rats, 18% Protein; Equalized Food Intake; 42-day Testing Period)

Lot No.	Protein Source	Relative Protein Efficiency (Basis milk at 100%)
1	Dried skimmilk control	100.0
2	Raw soybean oil meal (defatted, unheated)	78.3
3	Raw soybean oil meal + choline*	81.3
4	Raw soybean oil meal + 1% L Lysine	80.1
5	Raw soybean oil meal + 0.3% DL Methionine	102.4
6	Raw soybean oil meal + essential amino acids†—Methionine	71.7
7	Raw soybean oil meal + essential amino acids including methionine	91.6
8	Cooked soybean oil meal‡	102.4
9	Cooked soybean oil meal + choline	103.0
10	Cooked soybean oil meal + 1% L Lysine	99.4
11	Cooked soybean oil meal + 0.3% DL Methionine	103.0
12	Cooked soybean oil meal + essential amino acids—Methionine	94.0
13	Cooked soybean oil meal + essential amino acids including methionine	98.2
14	44% soybean oil meal commercial production	103.6

*Choline chloride to supply 200 mg. choline per 100 gm. diet.

†The amino acids used with levels indicated are as follows: L Lysine 0.5%, DL Methionine 0.3%, DL Tryptophan 0.1%, DL Histidine 0.2%, DL Phenylalanine 0.3%, DL Leucine 0.4%, DL Isoleucine 0.2%, DL Threonine 0.3%, DL Valine 0.3%, L Arginine 0.1%.

‡Prepared from the raw soybean oil meal by autoclaving at 15 lbs. pressure for 12 minutes.

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soybean oil meal can be very toxic to cattle, horses and sometimes to sheep, as well as guinea pigs and dogs. At the same time there is no instance on record where hexane-extracted soy flour or soybean oil meal has been the least bit harmful to humans or to livestock or poultry as the result of the process or solvent used in producing the flour or meal. A considerable amount of the work done in this country on trichloroethylene-extracted soybean oil meal versus hexane-extracted soybean oil meal is reported by Pritchard et al (14).

COTTONSEED MEAL

Tremendous strides have been made over the past several years by a number of people in improving the nutritive value of cottonseed meal for poultry and swine. The principal obstacles during previous years were (1) its high content of free gossypol, and (2) measurable damage to its protein due to overheating during the processing of the meal. Gosspyol is a major pigment of cottonseed and has been responsible for cottonseed meal's depressing effect on growth of chickens when used at high levels, as well as impairing hatchability and discoloring the yolks of eggs when they are stored for any considerable length of time.

Table 4 illustrates the effect of heat on the protein efficiency of cottonseed meal. Even autoclaving 30 minutes at 120° F. decreased the protein efficiency by 20%.

At the Third Conference on Cottonseed Processing as Related to Nutritive Value, held at New Orleans in November, 1953, the following statements were passed as resolutions:

"Results presented thus far indicate that chick and broiler rations containing cottonseed meal and soybean meal in equal proportions on a nitrogen basis, are equal or superior to rations based on either cottonseed meal or soybean meal alone, when the cottonseed meal has 0.04% or less of free gossypol and 75% or more of nitrogen solubility in 0.02N NaOH solution. Preliminary indications are, insofar as free gossypol is concerned, that cottonseed meals having 0.04% or less of free gossypol, can be fed in unrestricted proportions in balanced diets for chicks, broilers and swine."

The subject of "Cottonseed Meal" is covered in an excellent fashion by Altschul, Lyman and Thurber (2). Curtin (6) reviews the literature on the use of low gossypol cottonseed meals in swine and poultry feeds. The reference is also given (15) for an improved method recently developed for the determination of total gossypol in cottonseed and cottonseed meal. The advantages claimed for this proposed new method are its simplicity, accuracy, reproducibility and expediency.

TABLE 4. Effect of Autoclaving on the Nutritive Value of Ether-Extracted Cottonseed Meal*

Treatment	Protein Efficiency
Unheated	1.99
Autoclaved, 30 min. at 120°	1.58
Autoclaved, 60 min. at 120°	1.08
Autoclaved, 120 min. at 120°	0.28

*H. S. Olcott and T. D. Fontaine, J. Nutrition 22, 431-437 (1941).

LINSEED OIL MEAL

A large percentage of the available supplies of linseed oil meal—both in the states and abroad—is used in feeds or as feed for ruminants, namely, dairy cattle, beef cattle and sheep. Linseed oil was extracted initially from flaxseed by mechanical means. At first this processing was pretty crude. Then came hydraulic and expeller processing. After that—about 1949—the continuous method of solvent extraction was adapted to linseed in the U.S. This initial commercial production of solvent extracted linseed oil meal was preceded by about 12 years of experimental testing at agricultural experiment stations and within the industry. These experimental studies proved beyond doubt that a properly processed solvent extracted linseed oil meal (using hexane as the solvent) was every bit as good for livestock feeding as mechanically pressed meal.

Table 5 gives the results of a rather classical experiment with beef cattle in which hydraulic meal was compared with solvent extracted linseed oil meal with respect to daily gains, selling price, dressing percent and carcass grades of the cattle. It has been generally concluded as a result of this and many other cattle feeding tests that the "bloom factor" in linseed is due to its gum or mucilaginous substance, sometimes referred to as "mucin."

It has been known for many years that raw flaxseed contains a cyanogenetic glucoside, linamarin, from which HCN is liberated by the enzyme linamarase. This enzyme is completely destroyed during expeller processing, and, with the present solvent extraction in the states, the process used includes a special cooking operation that completely dissipates the cyanogenetic glucoside and inactivates the enzyme so that our solvent-extracted linseed oil meal of regular production is negative in potential HCN or in prussic acid liberation.

The controversy among a few investigators relative to a possible toxic or growth depressing factor for poultry in linseed oil meal versus advocates of the mucin in the meal being responsible for its depressing effect, is very well reviewed by Peterson (13). In our laboratory we have never been able to confirm the results of Kratzer and McGinnis (13). However, we have been able to confirm repeatedly results of the Canadian workers (13) showing that the mucilage in linseed oil meal is largely responsible for its objectionable features when fed to poultry. We have also demonstrated in our laboratory that the tolerance of growing chicks for linseed oil meal can be at least doubled, that is, the level can be increased from 2½ to 5% in a complete ration, without the usual disturbing

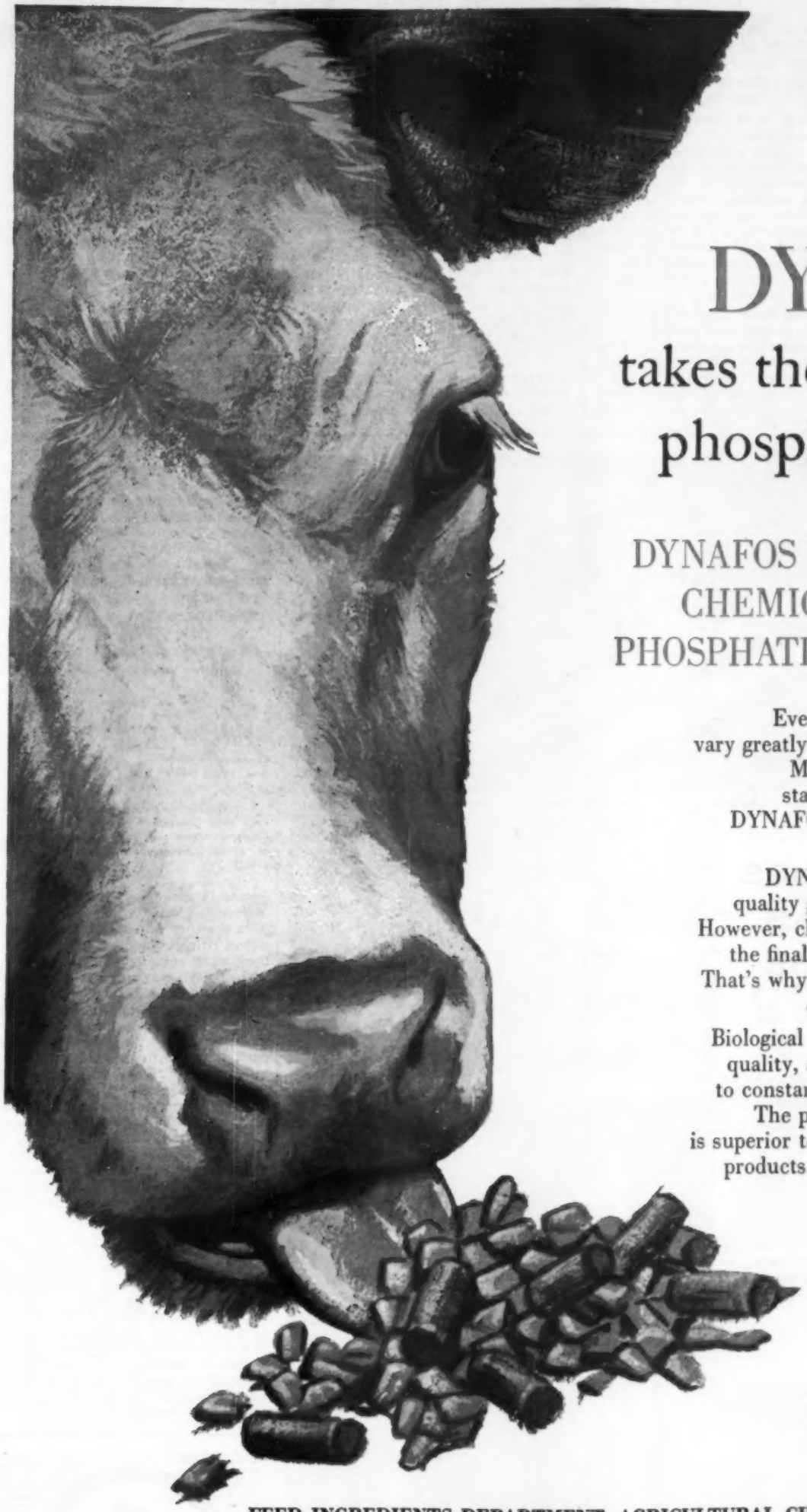
TABLE 5. The Effect of Linseed Oil Meal on the Finish of Yearling Steers

Results of an Experiment at the Iowa Agricultural Experiment Station June 15, 1938 to January 20, 1939 (Project 605)

Eight steers per lot, Fed 219 days	Hydraulic linseed oil meal	Extracted linseed oil meal	Ext. Linseed meal & crude extracted linseed oil	Ext. Linseed oil meal & vitamin F conc.*	Ext. Soybean oil meal & crude ext. linseed oil
Av. initial wt. (lbs. per head)	604	607	601	597	601
Av. daily gain per head (lbs.)	2.12	2.09	2.09	1.99	1.87
Av. daily feed per head (lbs.):					
Shelled corn (14% moist.)	13.31	13.25	13.48	12.97	11.87
Protein supplement	1.50	1.46	1.46	1.46	1.28
Linseed oil, grams			35.21		37.61
Vitamin F conc. grams				6.53	
Alfalfa hay	4.78	4.78	4.78	4.78	4.86
Mineral Mixture†	.03	.03	.03	.03	.03
Block salt	.03	.03	.03	.04	.02
Chicago selling price	$12.25	$12.25	$11.75	$12.00	$11.00
Dressing percentage	62.2	62.7	62.1	61.7	62.6
Carcass Grade:					
Prime	0	3	1	0	0
Choice	6	3	3	5	1
Good-Choice	1	2	3	2	3
Good	1	0	1	1	3

*Certain unsaturated fatty acids from linseed oil.

†Mineral Mixture—Ground, raw limestone, 60 lbs.; special bone meal, 37.94 lbs.; iron oxide, 2 lbs.; copper sulfate, 0.02 lb.; potassium iodide, 0.04 lb.



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features of sticky, wet droppings and depressed growth by incorporating the linseed in the ration in the form of linseed grits (crumblized pellets) or by having the poultry ration fed as pellets or grits.

PEANUT MEAL

Peanut protein seems to be at its best biologically when it is raw. Yet, it will withstand mild heat treatments during processing, such as in solvent extraction or hydraulic pressing without damaging the protein. Even autoclaving at 15 lb. pressure for 30 minutes affects the protein quality only slightly. However, peanuts subjected to commercial roasting or expeller (screw-press) pressing causes measurable damage to the biological value of the protein. Lysine is the first amino acid that is damaged. It is assumed that if peanut meal were heated excessively, methionine and/or cystine would be the next in line to be damaged. Considerable care should be taken during processing of peanuts to avoid overheating of the meal since its protein does not contain a surplus of lysine—certainly none to spare—and the peanut has a border-line content of methionine and cystine anyway, even in its raw native state (11).

MISCELLANEOUS OILSEED MEALS

Sunflower Seed Meal: Processing methods employed in the extraction of oil from sunflower seeds have marked effects on the nutritive value of the meals, particularly for poultry and swine. A maximum amount of hull should be removed from the seed prior to the extraction of the oil, and the decorticated meats should be subjected to a minimum amount of heat during the extraction process to avoid damage to the protein.

Rapeseed Meal: Rapeseed is credited with a goitrogenic factor. It is believed that its precursor is mustard oil, allylisothiocyanate. The bound glucoside is called "gluconapin." The enzyme "myrosinase," unless inactivated, liberates mustard oil from this glucoside. It is claimed that the toxicity of rapeseed meal can be considerably reduced, or practically eliminated, by processing it at controlled temperatures and reduced moisture (8%).

Mustard-seed Meal: Mustard seed also contains mustard oil in the form of the toxic glucoside, "sinigrin." Mustard seed or mustard seed meal can be rendered safe for animal consumption by special cooking or steaming during or after oil removal. However, due to the rather strong taste and aroma of mustard seed meal, its use is usually limited to 5 to 10% in rations for poultry and swine. A properly processed mustard-seed meal has been fed to dairy cows in a dry form mixed with other concentrates at a level of 3 to 5 lb. of mustard-seed meal a day without any adverse effects upon the milk.

FISH MEAL

In the production of fish meal, precooking of the fish may be done by either of two methods, commonly referred to as the "wet" and the "dry" processes. The wet process consists of grinding the fish to a slurry and cooking for around 30 minutes under steam pressure up to 15 lb. In the dry method the ground fish is cooked dry in steam-jacketed cookers at temperatures around 212 to 230° F.

Three types of driers are used, or have been used, in drying fish meal: (1) vacuum driers operated at temperatures around 100° F.; (2) steam-jacketed driers operated at temperatures around 212° F.; (3) hot-air driers operated at temperatures between 300 to 600° F. In some of these hot-air driers the heated gasses from the flames may come in direct contact with the material being dried. This process is called "flame" drying.

A review of a considerable amount of literature on fish meals as a source of supplementary protein for poultry and swine shows that the factors of greatest importance are spoilage before drying and temperatures used during the drying process. The species of fish and the cooking process—whether wet or dry—are considered by many experts to be of minor importance There does not seem to be much doubt but what "flame" drying of fish meal causes considerable damage to the biological value of the fish protein. This has been proved so many times that a few years ago the U.S. Bureau of Fisheries recommended that flame drying of fish meal be discontinued.

The data in Table 6, entitled, "Effect of Processing on Nutritive Value of Herring Meal," consists of the results obtained in tests at the University of British Columbia (3), in which they were actually studying the effect of drying temperatures on folic acid content of herring meal. The commercial meals were flame dried and the low temperature meals were made by drying the press cake in a current of air maintained at 100 to 110 degrees F. Folic acid content of the low temperature meals was 4.1 and 4.7 micrograms respectively (A & B) per gram, and for the commercial flame-dried meals the folic acid content was 0.29 and 0.27. The poor growth of the chicks on the flame-dried commercial fish meal suggests that the protein was considerably damaged by overheating.

TABLE 6. Effect of Processing on Nutritive Value of Herring Meal

	Chicks Av. Wt. Gms.		Relative Nutritional Value
Low temp., Meal A	217	A	100
Commercial Meal A ...	163	A	75
Low temp., Meal B	210	B	97
Commercial Meal B ...	155	B	71

Ref.: "Effect of Drying Temperature on the Folic Acid Content of Herring Meal," by J. Bieley, B. March and H. L. A. Tarr, University of British Columbia. Science 116: 249-250 (1952).

On an average, most of our good fish meals in the U.S. analyze 60% and higher in protein. Some meals, especially herring, will analyze 70% and over in protein. When we find a fish meal testing much below 55% in protein, we are suspicious that it is either a low-grade fish meal, such as shrimp or crab meal and the like, or it could be one of our good fishes adulterated or blended with a low-

(Turn to INGREDIENT, page 61)

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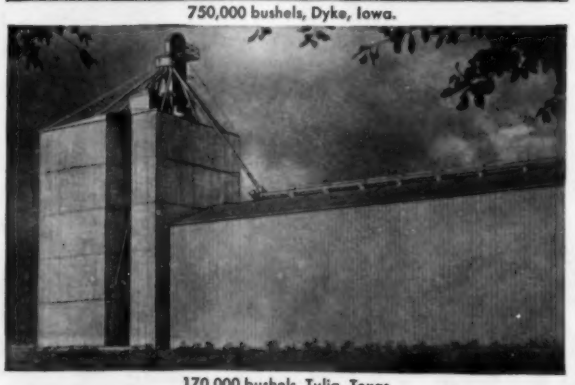

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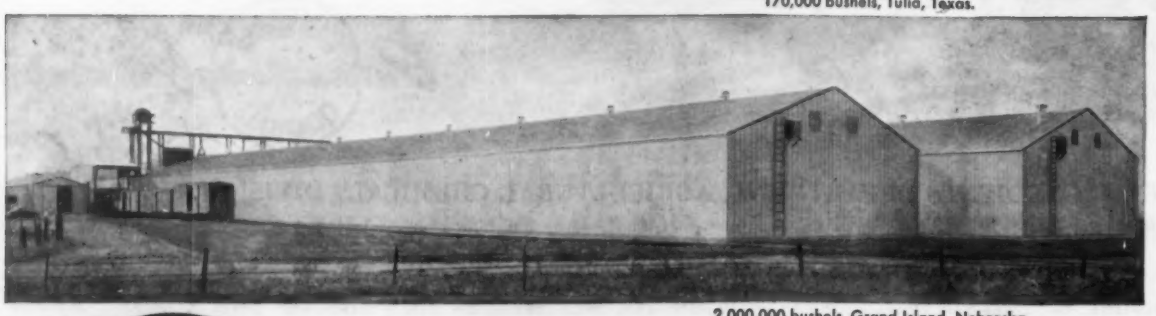

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Shipping Fever Virus Is Isolated by USDA

WASHINGTON—A virus that is one of the causative agents of shipping fever, a costly and prevalent respiratory disease of cattle, has been isolated by U.S. Department of Agriculture veterinarians.

The discovery, which represents a major breakthrough in the knowledge of this highly complex disease, was made by Robert C. Reisinger and coworkers in the department's Agricultural Research Service. To date, the scientists at USDA's Agricultural Research Center, Beltsville, Md., have:

1. Isolated the Para-influenza 3 virus (designated SF-4 virus) from nasal mucus of calves showing signs of shipping fever.
2. Produced mild cases of shipping fever by spraying this virus into the noses of healthy calves.
3. Grown the virus in tissue culture, and produced anti-serum.

The scientists also isolated infectious bovine rhinotracheitis (IBR) virus from calves with shipping fever, but found that SF-4 anti-serum has no effect on the IBR virus. In some instances SF-4 and IBR viruses produce similar symptoms, and both appear to be a part of the shipping fever complex.

The ARS scientists isolated another virus, as yet unclassified, from cattle suffering with shipping fever.

Pasteurella (bacteria) were isolated from 65% of cattle in herds with shipping fever and from half the cattle in herds without the disease. In some cases these bacteria cause a secondary infection that determines the severity of the shipping fever.

The SF-4 virus has been examined by scientists at the National Institutes of Health and found serologically similar to a virus isolated from children suffering from respiratory diseases. It has not been determined that the SF-4 virus can cause these diseases in children or that the virus from children can cause shipping fever in calves.

Dr. Reisinger thinks that the number of infectious agents isolated from cattle affected with shipping fever may some day be comparable with the number isolated from humans affected with respiratory infections. He feels that much more will have to be learned about this disease complex before an effective shipping fever vaccine can be produced.

Moves to Alaska

NORTHWOOD, IOWA — Wallace Coleman, who operated an elevator at Northwood and a grain storage business at Manly, Iowa, has left with his wife and three sons for Anchorage, Alaska, to enter business and make their home. He recently leased his 900,000 bu. grain storage business at Manly to Roger Newburn, Woolstock, Iowa, and leased his Northwood elevator to Bert Struyk.

Warren Gaer Joins Walnut Grove Products

ATLANTIC, IOWA—Warren Gaer, head football coach at Drake University, Des Moines, Iowa, for 10 years, has accepted a position as director of sales personnel with the Walnut Grove Products Co., Inc., with general offices in Atlantic, according to E. A. Kelloway, president of the feed manufacturing company.

Warren Gaer

Mr. Gaer, who has been serving as executive secretary of Drake's National Alumni Assn. after resigning as head coach at the end of the 1959 season, will join Walnut Grove Sept. 7. He will be in charge of Walnut Grove's sales personnel procurement program.

Walnut Grove serves eight Corn Belt states with manufacturing plants in Atlantic, West Liberty, Independence and Cherokee, Iowa, and Elkhorn, Neb.

Bureau of Standards Issues New Booklet

WASHINGTON — "Checking Prepackaged Commodities," a new 27-page publication written by Malcolm W. Jensen, Office of Weights and Measures, National Bureau of Standards, was issued recently.

The booklet is available for 35¢ from the Government Printing Office, Washington 25, D.C.

ELEVATOR HOLDINGS SOLD

MOSCOW, IDAHO—Sale of grain elevator holdings and equipment at Oakesdale and nearby Seabury, Wash., by Latah County Grain Growers to Oakesdale Grain Growers, was announced here recently. The Moscow company acquired the Eastern Washington property July 1 from the Mark P. Miller Milling Co. of Moscow. The sale includes warehouses and elevators with a capacity of some 200,000 bu., according to Fred Cann, Latah County Grain Growers manager. No purchase price was announced.

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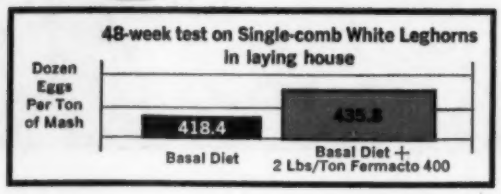
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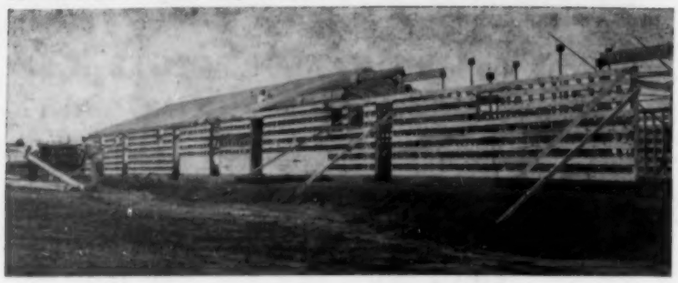

FARROWING HOUSE—Construction of this new central farrowing house will more than double the farrowing facilities at the Moorman Manufacturing Co.'s research farms, according to E. H. Wilson, company president.

Moorman Firm Builds New Farrowing House

QUINCY, ILL. — Farrowing facilities at the Moorman research farms will be more than doubled with the construction of a new central farrowing house, according to a recent announcement by E. H. Wilson, president of Moorman Manufacturing Co.

It will be possible to farrow approximately 200 litters yearly in the new 34½x148 ft. building. There will be 30 steel farrowing pens, plus an early weaning area at one end of the building. The present 20-pen central farrowing house was built in 1948 to replace one destroyed by fire. It will continue to be used.

The new building is being built of galvanized sheet metal lined with cement asbestos board, fully insulated and with forced ventilation. The structure will have radiant floor heat in the creep areas. Waste removal will be by mechanical cleaners of the shuttle type.

WAREHOUSE PLANNED

CINCINNATI — The Dorsel Co., cornmeal and oatmeal manufacturer in suburban Newport, Ky., has purchased a site on Donaldson Highway near the Greater Cincinnati Airport for about $5,000. Norbert Dorsel, company president, said plans are being prepared for construction of a warehouse at the new site.

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Incidents of Newcastle Disease can be greatly diminished and, as a matter of fact, put under complete control by vaccinating all breeding stock and replacement pullets Intramuscularly at bloodtesting or housing time with VIPOL 717 (LaSota Strain) Live Virus Newcastle Disease Vaccine, using the VIPOL Syringe specially designed for this purpose. Every bird thus vaccinated will receive a measured and full dose of vaccine. Birds vaccinated INTRAMUSCULARLY with VIPOL 717 (LaSota Strain) Live Virus Newcastle Disease Vaccine transmit a high degree of immunity to their offspring, thus obviating the necessity for vaccinating baby chicks before they are 10 to 14 days of age.

Better and More Durable Immunity

Since it is an established scientific fact that the older the bird is at time of vaccination, the better and more durable is the immunity, then, obviously, chicks produced from breeders which have been vaccinated at bloodtesting or housing time will be protected by parental immunity until they are 10 to 14 days of age. Such chicks, if vaccinated at 10 to 14 days of age, are old enough to get the full benefit of the vaccine. Danger of chicks produced by breeders vaccinated INTRAMUSCULARLY with VIPOL 717 at housing time coming down with Newcastle Disease during the first week of their lives is rare.

Why Vipol 717 Is Most Effective

It has been definitely established that VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine induces a significantly higher serological immune response than the B-1 Strain and consequently a more durable immunity. This is a most *vital factor* to consider if the vaccination method you choose for the first vaccination is intranasal or intraocular. If your choice is the drinking water method, then VIPOL 717 (LaSota Strain) is the vaccine that will give your birds the best protection. This is a bold statement but, nevertheless, true. Tens of thousands of poultrymen can attest to the truth of our claim.

Pathologists Prove Superiority

Scientific studies conducted by poultry pathologists at a leading university clearly pointed out in their published report, that in laboratory trials VIPOL 717 (LaSota Strain) Newcastle Disease Live Virus induced a significantly higher serological immune response than the B-1 Strain. The researchers further reported that replacement flocks vaccinated with the VIPOL 717 (LaSota Strain), while carrying residual immunity from early primary vaccination with the B-1 strain, showed an excellent rise in antibody titer without manifesting obvious clinical respiratory signs. This is a clear indication of the great *immunizing* quality of VIPOL 717 (LaSota Strain).

The VIPOL 717 (LaSota Strain) retains its power to immunize for a period as long as 24 hours and more after it has been added to poultry drinking water. Because of the original high titer of the virus in the vaccine itself, it can stand dilution in the drinking water well beyond recommended levels. The VIPOL 717 (LaSota Strain) has unlimited infecting potential that continues through the vaccine reaction period and insures the immunity of a maximum number of susceptible birds.

Intramuscular Vaccination with Vipol 717 (LaSota Strain) Newcastle Disease Vaccine Gives Complete Protection Through Entire Production Period

Thus far we have shown you how to fully protect your breeders by vaccinating INTRAMUSCULARLY with VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine and how this step will protect baby chicks produced by these breeders until they are at least 10 to 14 days of age. The offspring should be given their first Newcastle Disease vaccination with VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine at that time. If done INTRAMUSCULARLY, one application will protect them until housing time. If done by the Drinking Water Mass Method, two applications are recommended—the first application at 10 days of age followed with the second application when the birds are 4 weeks of age. The one INTRAMUSCULAR vaccination or the two vaccinations by the Drinking Water Method will protect the offspring to bloodtesting or housing time. To further protect these birds through their entire production period, we strongly recommend that they be revaccinated INTRAMUSCULARLY with VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine at bloodtesting or housing time.

Replacement pullets vaccinated at housing time by the INTRAMUSCULAR METHOD with VIPOL 717 (LaSota Strain) Newcastle Disease Vaccine will likewise be protected through the production period. Re-vaccination of birds already in production may be done with complete confidence and with no harmful effect.

The adoption of this vaccinating program will go a long way toward controlling Newcastle Disease on any breeding farm. We venture to predict that, should our recommendation be put into effect on every breeding farm in the country, incidents of Newcastle Disease would soon become a rarity.

For your supply of VIPOL 717, or for more information, contact your nearest dealer or Vineland state distributor, or write to Vineland Poultry Laboratories, Vineland, N. J., or 4068 Broadway Place, Los Angeles 37, Calif.

VINELAND POULTRY LABORATORIES

Tevis M. Goldhaft

Tevis M. Goldhaft, D. V. M.
General Manager

New Vaccine Foe Found for Mastitis

DURHAM, N.H.—A vaccine which, it is claimed, prevents the spread of and increases resistance to staphylococcal mastitis in dairy cows has been developed by a New Hampshire Agricultural Experiment Station research team.

Commercial production of the new vaccine is expected to begin this fall.

Dr. Lawrence W. Slanetz, bacteriologist, and his University of New Hampshire associates found in five years of tests with a dairy herd of 160 lactating cows:

1. Vaccination with a staphylococcal toxoid or bacterin toxoid almost completely prevents spread of the infection in vaccinated cows.

2. Vaccination also brings a marked reduction in the number of acute flare-ups in infected cows over periods of up to 18 months.

Dr. Slanetz said the vaccine stimulates the production of antibodies, thus increasing an animal's resistance to the infection.

Dairy scientists estimate that in the U.S. alone mastitis causes an annual loss of $250 million, including 5 billion pounds of milk.

Bulls Gain 10% Faster When Fed Aureomycin

FAYETTEVILLE, ARK. — Young beef bulls fed 80 mg. of Aureomycin daily gained 10% faster than those not fed the antibiotic, according to researchers at the University of Arkansas Agricultural Experiment Station.

However, Dr. Maurice Ray and Dr. C. J. Brown, associate animal husbandmen, pointed out that animals not receiving Aureomycin gained slightly more efficiently.

Animals fed Aureomycin showed no apparent differences in general health, feed consumption or conformation score, the scientists said.

For the trials, 10 bull calves from the main experiment station averaging about 380 lb. were divided into two groups. All animals received the same ration consisting of two parts grain and one part prairie hay. Five of the animals received, in addition to this ration, 80 mg. of Aureomycin daily during the 126-day test.

Pathologist Named for Georgia Laboratory

TIFTON, GA.—Dr. W. W. Adams, graduate from the University of Georgia School of Veterinary Medicine, has been made veterinary pathologist for the new Georgia poultry laboratory No. 6, in Tifton.

The laboratory will be located at Georgia Coastal Plain Experiment Station in the same facilities used by the currently-operated animal disease laboratory. The laboratory staff will also include a technician to be announced later.

The laboratory in Tifton is the sixth such installation to be set up.

BRANCH STATION

POCATELLO, IDAHO—The Idaho Egg Producers Assn. will move its branch station to Idaho Falls around the first of the year into a new building being constructed, according to Elvin Gottfredson, Pocatello branch manager. The 100x200 ft. painted metal building will accommodate a retail feed center, offices, feed manufacturing and egg handling equipment. The station covers southeast Idaho for the egg co-operative.

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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR YOUR FOOTED ANIMALS

THERE'S A SURE WAY TO FIND OUT WHAT DRESSPRINT COTTON BAGS WOMEN REALLY WANT. . .

. . AND WE TOOK IT

Selecting cotton print patterns that women will like and buy is a must for the bag business and the milling business. We have always tried hard to do this (and with moderate success). We had expert fashion guidance . . . and years of experience. We had well-considered opinions from you. But, frankly, it was largely guesswork . . . and hope. And guessing is not good enough.

So, we took the sure way. We learned from women who actually use cotton bags for home sewing.

The survey was made by a research organization with access to a nation-wide panel of typical homemakers, including farm women. (The women did not know Bemis sponsored the study.)

We learned what types of florals, plaids, checks, geometrics, etc., are currently popular.* What colors. What color combinations. We learned that women who sew prefer fewer *different* patterns and more bags of the same pattern. We learned how much they sew . . . and what they make from emptied cotton bags (an important guide to us). We learned that dressprint bags can influence the sale of your products.

It was probably the largest, most thorough study of its kind ever made by the bag business.

But what does it mean?

Principally, it means that Bemis will concentrate on the prints your customers really want . . . and you will get the sales benefit of proved-popular bags.

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***HERE'S WHAT THEY LIKED . . .**
Popular and style-right Bemis patterns include: Bemis Designer Prints, "Sparklin" pinstripes, and Sandman "Goldilock" pillowcase bags.

Call your Bemis man today.

TRAMUSCULARLY with VIPOL 717 (LaSota Strain) Live Virus Newcastle

Because of the original high titer of the virus

General Manager

FOR FOUR FOOTED ANIMALS

IF

IF you keep records

IF you compare weight and feed efficiency of broilers based on Nichols 108 mothers with broilers based on White Rock mothers

IF you make split house tests under *commercial* conditions

IF you have your processor check the *extra* ½% to 1% of salable meat on a chilled yield basis

YOU'LL JOIN THE SWING TO BROILERS BASED ON NICHOLS 108S.

We'll gladly help you to set up records, comparisons, tests so you can prove the facts for yourself. Ask one of our representatives or contact us direct.

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Exeter, New Hampshire

George Collier J. V. Wright

George Collier Named Dorsey Trailers Head

ELBA, ALA.—A new management team consisting of George L. Collier as president and T. K. Dorsey as executive vice president heads Dorsey Trailers, Elba, following the sudden death of J. V. Wright, president, who had been with the firm 47 years.

Mr. Collier has been in Dorsey's financial segment for 10 years, becoming treasurer and director. His election to the presidency was announced by Oliver DeG. Vanderbilt III, president of the Dorsey Corp., parent company of Dorsey Trailers.

T. K. Dorsey is a son of one of the founders of the company, and has served the firm since 1939 in various phases of production and sales.

Mr. Vanderbilt noted that the company's sales in the first six months of 1959 were 83% above the same period last year; facilities are being expanded, with the recent approval of office and plant construction projects totaling 100,000 sq. ft.; several new product lines have recently been introduced, and the distributor network has been expanded.

General Mills Names New Research Director

MINNEAPOLIS — Dr. William B. Reynolds has been named vice president of General Mills, Inc., Minneapolis, and director of research, C. H. Bell, president, has announced. This appointment, Mr. Bell said, has been made "to further strengthen executive attention to the increasingly important research function in General Mills."

Dr. Reynolds, a native of Ottumwa, Iowa, and formerly director of research for Phillips Petroleum Co., Bartlesville, Okla., is a graduate of Cornell College, and holds a Ph.D. degree in organic chemistry from the University of Chicago.

After service with DuPont and the Interchemical Corp., Dr. Reynolds was with the University of Chicago as a research instructor. In 1943, he moved to the University of Cincinnati as assistant professor, later becoming associate professor and head of the chemical division of that university's applied science department.

Since 1946, Dr. Reynolds has been employed by the Phillips Petroleum Co., where he first supervised its synthetic rubber program. He was promoted to assistant director of research and, in February, 1959, was appointed director of research.

In his position as vice president in charge of research, Dr. Reynolds will be responsible for the coordination of research conducted by the General Mills central research laboratories, as well as by the company's divisions, and for the integration of such work in the total research program of the company.

Brower to Build

SPRINGDALE, ARK.—The Brower Manufacturing Co., Quincy, Ill., equipment manufacturer, has purchased a 14-acre tract of land here for use as the site of a new warehouse. Announcement of the purchase was made by B. J. Brower, president of the firm.

In announcing the purchase, Mr. Brower said he has "great faith" in the poultry and livestock industries of northwest Arkansas and that his company would invest in facilities to serve the region.

The Brower company is one of the largest suppliers for the John J. Carroll Co., which has outlets in Springdale and at other points in the northwest Arkansas poultry area.

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this year . . . and for years to come

MAIL THIS COUPON TODAY FOR COMPLETE INFORMATION ABOUT ARID-AIRE'S Sensational NEW *LONG TERM* LEASE PLAN. With this plan it's easier and more profitable than ever to use an ARID-AIRE grain dryer. You don't tie up your working capital—you don't borrow against your regular line of credit. You get faster depreciation advantages PLUS the business building – profit making advantages of using the safe, modern, easy-to-use ARID-AIRE grain dryer!

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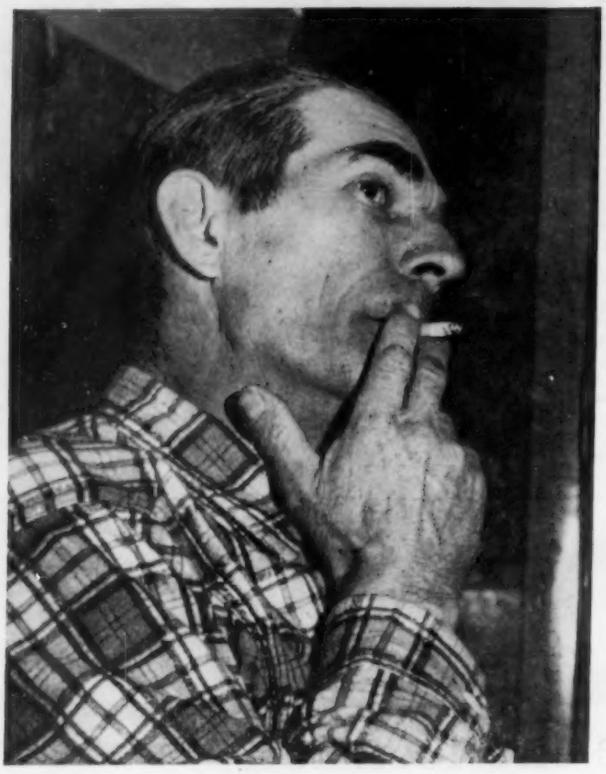
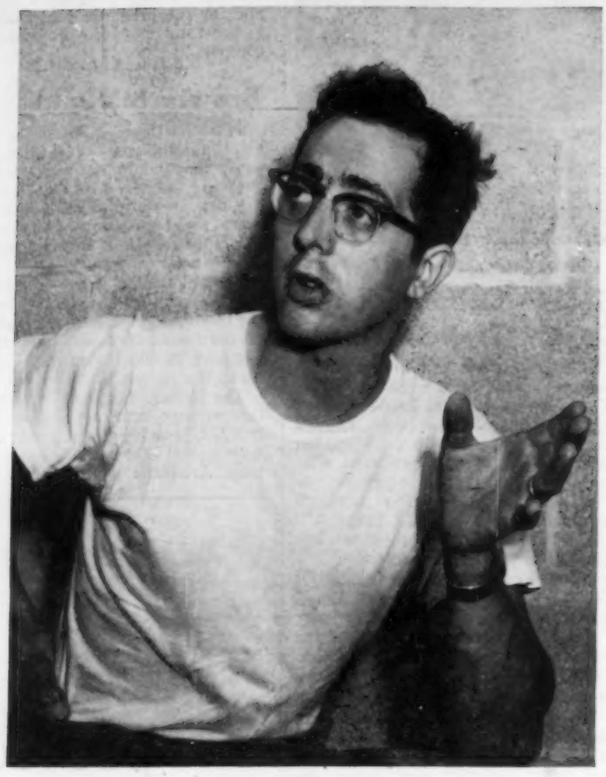


1. *"Production usually dropped in hot weather."*



2. *"I had to have higher hatchability."*

"I needed help . . . and my feed

Meet four men with four different problems. Each turned to his feed man for help. Each got fast, satisfying action with nf-180.

The four men above are a lot like thousands of others who have gone to their feed company with a problem . . . and received help in the form of an nf-180 medicated feed. The result in each case is a satisfied, loyal customer. Here are four examples of how nf-180 does the job:

1. Ralph Jaroch, Waukesha, Wis.

"Four weeks after caging my pullets they were in about 20% production. I tested nf-180 by feeding it to 418 birds in one row. Two weeks later they had jumped from 138 to 358 eggs a day. And they averaged 75% production right through the 5 hot summer months when I usually had a drop in production. I'm through monkeying around . . . now, I give all my birds feed with nf-180 in it."

2. Robert Keller, Nottingham, Pa.

"I produce around 1150 dozen hatching eggs a week. So steady production and high hatchability are important. After testing nf-180, I switched entirely to it. And the last three hatches of my eggs came off at 87% . . . which paid me a bonus of $172.00 in one month. I also like the steadier production that nf-180 gives. I think nf-180 really does the job."

3. J. Russell McKarns, West Unity, O.

"Four years ago I began losing hogs to necro and bloody dysentery. We used some other recommended products but didn't get results. Then my feed company said to try nf-180. We tested it on half the sick pigs and in a week they were back pretty near to normal. And once they were treated, they didn't come down with scours again. If it hadn't been for nf-180, we'd have been out of the hog business. But with nf-180, we can control the disease. I'm mighty high on nf-180."

4. Ian S. Thompson, New Hope, Pa.

"In these days of keen competition and awful egg prices, every avenue must be employed to hold up production and cut costs. And I honestly think that if you are anxious to make out in the business, you have to have nf-180. It's cut my mortality to the lowest ever. My feed conversion is running 3.5 lbs. to a dozen eggs. And at the end of 14 months of lay, when I'm scheduled to sell out the old birds, I'm still getting 60-65% production. Now, I plan to change my replacement schedule and keep my birds an extra 4 to 6 weeks."

3. *"Scours were driving me out of the hog business."*

4. *"I wanted increased production, lower costs."*

company furnished it with nf-180"

Feed company research shows nf-180 even surpasses our claims

These four men are just a sample of the thousands who have switched to nf-180 . . . often after doing their own private testing beforehand.

Several major feed companies have tested nf-180, too. One company with extensive research farm facilities found in making its own comparisons that results considerably exceeded the conservative claims which have been made by Hess & Clark. As a result, that company now includes an nf-180 medicated layer ration in its line of feeds. (Many other feed manufacturers also regularly produce and sell nf-180 medicated feeds for poultry and swine.)

You can promise these benefits on your own feed tags

With nf-180, you can make your feed tags more than a routine listing of ingredients. Actually, nf-180 can turn your feed tag into one of your most effective sales tools. Why? Look at the benefits you can promise when nf-180 is in the feed:

Layers (continuous low level): Increase egg production, improve feed-egg ratio, extend egg-laying period, maintain greater laying performance during stress, improve hatchability, and increase production in the early laying period.

Swine: Treat necro (bacterial enteritis, necrotic enteritis, black scours) and vibrionic (bloody) dysentery.

Booster feeds: The nf-180 label carries more poultry disease prevention, treatment, and control uses than any other feed medication today.

Red Foley

Hess & Clark's No. 1 Salesman

Today more of your customers know about nf-180 than ever before. Word-of-mouth advertising by satisfied users is part of it . . . factual reports from men like the four above are published regularly by Hess & Clark in leading magazines to spread the nf-180 story. And every week on the 140-station NBC Monitor network Red Foley carries nf-180 news to millions of listeners. Many of Red's fans are city folks, incidentally, and this year Hess & Clark is using this popular show to launch a new 'Golden Goodness of Eggs' campaign to help sell the eggs *your* customers produce. We hope you'll listen to the show . . . and remind your customers to enjoy it, too . . . 15 minutes of top entertainment every weekend.

We also urge you to get the full facts on nf-180 medicated feeds and how they can be of service to you. Write or wire us . . . or ask your Hess & Clark salesman for new information which he can supply.

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USDA Predicts Stable Cattle Prices, Lower Hog Levels

WASHINGTON—Cattle prices are likely to remain stable during the rest of this year and hog prices through next spring are not expected to equal last year's, according to the July Demand and Price Situation Report by the U.S. Department of Agriculture.

The USDA report says some seasonal declines are likely for sheep and lambs this summer, but that prices probably will average near those of last year.

A limited seasonal increase in egg prices is likely in the next few months. Broiler prices in August are likely to exceed the monthly averages to date in 1959.

Feed prices this summer and fall are expected to remain a little below those of a year earlier because a large 1959 feed crop is in prospect and 1959 price supports are generally lower.

Livestock and Meat

Livestock slaughter and meat production will continue above year-earlier levels during the next few months. Hogs are expected to provide most of the increase. Cattle slaughter may be up a little. Hog prices had declined appreciably by late July, and probably will remain relatively low. Prices of grass cattle are down somewhat and could decline a bit more. Fed cattle prices may change little. Sheep and lamb marketings are expected to be up from last summer and prices will likely average about the same or a little lower than a year ago until late in the year.

Hogs slaughtered in July began to include some from the 1959 spring pig crop which was 12% larger than the 1958 crop. These overlapped with remaining hogs from 1958 fall farrowings. As pork continued to move out of cold storage in July from stocks a third larger than last year, prices of hogs declined. Some price recovery is likely, but because marketings will continue large, it will be temporary. Some further dip in price is probable about mid-fall. But on the whole, the summer and fall season may be marked by considerably less seasonal change in hog prices than usual.

Producers' intentions for this fall are for 8% more farrowings than last fall.

Cattle prices are likely to be relatively stable the rest of this year. Marketing of fed steers and heifers will remain large since the number of cattle and calves on feed July 1 in 13 leading states was 10% greater than last July. About an equal gain in marketing during July-September over last year is expected.

Prices for dairy products are stable near year earlier levels. Milk production on farms in the first half of 1959 was slightly below a year earlier. Total civilian consumption is up slightly and purchases under the support program are down a little.

The rate of milk production per cow has continued to set new record highs. But with strong markets for beef cattle, the culling rate among milking herds has continued relatively high. As a result, total milk production did not quite equal that of a year earlier during the first half of 1959.

Poultry and Eggs

The outlook is for limited seasonal egg price rises in the next few months, with the increases most pronounced for large eggs of the better grades. However, U.S. average prices are not likely to exceed 1958 for any length of time until possibly the last month or two of the year.

In mid-June egg prices began a sharp recovery from the very low levels to which they had fallen in the preceding two months. Following a slight recession from their peak, in early July nearby eggs in New York City, at 44¢ per doz. for large whites, were about 3¢ below the year before, while some quotations on the West Coast were even closer to last year. Chicago prices were about 8¢ below 1958. Earlier this spring prices had been generally 10-14¢ per doz. lower than a year earlier.

In mid-June the U.S. average price received by farmers for eggs was 24.9¢ per doz., compared with 35.2¢ in June, 1958. The rapid rise in egg prices since mid-June has brought the U.S. average price much closer to 1958.

Despite the significant reduction in the size of the national laying flock during May and June, the July 1 flock was only 1% smaller than last year. The number of pullets for laying flock replacement to mature before Oct. 1 is larger than a year ago, and rate-of-lay per bird still increases from year to year. As a result, monthly egg production in the remaining months of 1959 is likely to exceed 1958. On Jan. 1, 1960, the number of layers on hand will probably be almost as large as the 327 million of Jan. 1, 1959.

The 1959 turkey crop is likely to slightly exceed the record of 81 million raised in 1957. An increased proportion of the crop will be Beltsvilles and large white turkeys, and fewer will be Bronze, than in both 1957 and 1958. The increase from last year in the turkey crop came in the hatches of May and earlier. This indicates larger slaughter in the late summer months than last year, much of which will move into storage until the holidays.

Turkey slaughter after October is likely to be below 1958 since the June hatch was smaller than a year earlier, and settings have since declined further. This, coupled with the facts that part of the increased turkey crop is already slaughtered and eaten, and that storage stocks are below last year, are plus factors in the turkey price outlook for the closing months of this year.

PRODUCTION SCHOOL SPEAKERS—Among the speakers at the 1959 Feed Production School, being held Sept. 23-25 in Kansas City, are the men pictured here as they discuss plans for their presentations. Left to right are C. N. Hultberg, California Pellet Mill Co., Crawfordsville, Ind.; Robert Wornick, Chas. Pfizer & Co., Inc., Terre Haute, Ind., and Art Stegner, Butler Mfg. Co., Kansas City. Mr. Hultberg will speak on "Pelleting Problem Ingredients;" Mr. Wornick will outline results of his research project on the "Effects of Pelleting on Micro-Ingredients;" and Mr. Stegner will report on studies on "Bulk Pellet Handling and Storage."

• • •

Livestock Price Outlook as Seen By Ag Economists

LAFAYETTE, IND. — Here's how agricultural economists at Purdue University see the livestock numbers and price situation in the months ahead:

HOG PRICES are expected to decline less than usual during the August-October period this year. Reason—farrowings were increased only 5% in February and 8½% in March-May, compared with 26% for last November through January. Also, about half of the March-May increase was in non-Corn Belt states, where hogs are usually marketed older at heavier weights. Thus marketings were greater than expected in June-July but should not increase as much as usual for the next two or three months.

Prices may go down to liquidation levels in early 1960. Increased marketings from (1) heavier hogs from late spring farrowings outside the Corn Belt, (2) a 7 to 9% increase in June-August farrowings and (3) farmers saving back less sows than gilts to expand herds are expected.

Prices (barrows and gilts, Indianapolis) for January-April, 1960, will average around $11-13 cwt.; nearer $13 if liquidation does not take place and nearer $11 if it does.

Hog prices are expected to average substantially less for the year 1960 than for 1959. Considerable price recovery should be under way by mid-1961.

FED CATTLE PRICES are expected to be generally steady for the remainder of the third quarter. Discriminations against heavy cattle now make it seem advisable to market cattle as soon as they are finished for their grade.

Feed conditions in the range states of the West are only average in contrast to the very good conditions of last year. Consequently little if any expansion in cattle numbers will take place in the West this year.

The available supply of feeder cattle should be larger this year than last for at least two reasons: (1) The calf crop was 5% larger this year than last, and more have been withheld from slaughter. (2) Demand for "stockers" will be less than last year in the West because of the changed feed conditions.

Prices are more likely to weaken than advance. So there seems to be no reason for haste in contracting feeder cattle this fall. Movement of feeder cattle is expected to be earlier than last year.

Elevator Planned

SAVAGE, MINN.—The Continental Grain Co. has announced beginning of construction work on a 5-million-bushel elevator at Savage on the Minnesota River, near Minneapolis. Michel Fribourg, New York, president of the firm, said the elevator will be completed by the fall of 1960.

Marvin Laursen

Donald Funk

KENT APPOINTMENTS—Otis Joiner, general manager of Kent Feeds, Inc., Muscatine, Iowa, has announced the appointment of Marvin Laursen to the position of assistant director of marketing services, and Donald Funk as an assistant nutritionist. Mr. Laursen farmed 11 years before attending Iowa State University and gaining his B.A. degree in farm operations in 1956. He did graduate work in agricultural economics prior to accepting his present position with Kent Feeds. Donald Funk, a 1956 graduate of Iowa State University, received his degree in dairy husbandry. Since his graduation, he has been employed by a northeast Iowa feed firm as a nutritionist. Mr. Laursen and Mr. Funk will be officed at Muscatine in the general administrative headquarters of Kent Feeds.

District Feed Meetings Scheduled in Illinois

CHICAGO — Six district meetings for Illinois feed dealers are being planned Aug. 25 through Sept. 3, according to a committee composed of Illinois Feed Assn. officers, directors and sales managers which met recently in Springfield.

These meetings, to be held for the purpose of discussing common problems, will take place in the following Illinois areas:

Aug. 25—New Berlin area. Roy Hewitt, Hewitt-Ware Feed & Supply Co., Hillsboro, is chairman, assisted by Alvin (Pete) Lovekamp, past president, U & L Grain Co., New Berlin, and A. T. Myren, IFA treasurer, Faultless Milling Co., Springfield.

Aug. 26—Centralia area. Herbert Woolsey, IFA director, Woolsey Farm Service, Vandalia, is chairman, assisted by Herschel Wilson, Dixie Mills, Inc., East St. Louis, and Charles Steinhauer, Ralston Purina Co., St. Louis.

Aug. 27—Charleston area. Bruce Glezsen, IFA director, Mont-Eagle Mills, Oblong, is chairman, assisted by Quintin Siemer, past president, Siemer Milling Co., Teutopolis.

Sept. 1—Dwight-Pontiac area. Clair Hendrix, past president, Hendrix Hatchery, Herscher, is chairman, assisted by Robert Turnage, Honeggers' & Co., Fairbury.

Sept. 2—Galesburg area. Willis Sauder, IFA director, Sauder's Feed Service, Tremont, is chairman, with Donald Thayer, the Pillsbury Co., Clinton, Iowa, and Wilbur Pobanz, Kent Feeds, Muscatine, Iowa, assisting.

Sept. 3—DeKalb area. Carl Rylander, IFA director, Howard Kauffman Feed Mill, Waterman, is chairman, with George Hawkins, Illinois Farm Supply Co., Chicago, and William Wakeman, Thompson Farms Milling Co., Chicago, assisting.

The six meetings will convene with a supper, followed by two panel discussions on a current topic of interest to the dealers of that particular area.

Pending approval of the association's membership at the annual convention in Springfield, Nov. 4-5, it has been recommended that in the future every district chairman will automatically become a director of the Illinois Feed Assn. for one year.

OPEN HOUSE

TAUNTON, MINN.—An open house was held recently at the Taunton Cooperative Elevator, according to company officials. The structure was completed the first part of July.

STABILITY

A Superior Dry Vitamin A Feed Supplement

PROVEN STABILITY: Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

MIXTURE No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Percent of Vitamin A remaining after 3 months	98.6	97.8	95.4	98.6	95.6	95.4

COMPLETE AVAILABILITY: Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

UNIFORM DISPERSION: Dawe's FIXTAY is of a particle size and shape which readily disperses and remains uniformly distributed.

Dawe's FIXTAY is available in all practical potencies. Write for samples and quotations on the potency of your choice.

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JOE BROOKS

BY AL P. NELSON

Grandpa Hodgkins Has An Idea

Heavy feet trudged along the roadway that led from the Hotel Manitou in Hansen's Creek to Joe Brooks' Feed Mill. The employes, after indulging in one of Joe Brooks' steak dinners prior to the monthly sales training meeting, weighed a great deal more than two hours previous.

"Joe ought to provide a taxi service from the hotel to the feed mill after these banquets," Milt Peters grumbled, "or we'll be so exhausted we can't think."

"Better you be exhausted than fall asleep," grinned Joe, who walked with the rest of the men. "This is a warmup walk."

Even Grandpa Hodgkins who brought up the rear, hobbled along quite rapidly with a cane. "Skip the dessert, Milt," he advised. "I allus do. Then you don't get all that blubber around the middle and you don't get winded so easy."

Milt sighed. "I haven't got your will power, Grandpa. I wish I had."

"Oh, well, yer young," consoled Grandpa as he wheezed a little. "Wait till you put on another 30-40 years."

At the mill, the men went into the large air conditioned salesroom, puffed on their after dinner cigars which Joe had also provided, then leaned back in their chairs.

"Someday I'm gonna be a director of some corporation," Milt offered. "I like to sit here like a big shot. I get a kick out of these sales meetings. I like to see how much smarter I am than you guys."

"Smart!" howled Pop Henley. "Why you're not even smart enough to get to work on time—after working here seven, eight years."

Milt frowned. "Why bring that up now, Pop? After all, it isn't the hours you put in that count; it's what you get done when you are working."

"Except," Joe reminded critically, "that if you aren't there when the store and mill are open and a customer can't find you we lose a sale."

"Touché!" Smiley Johnson grinned.

Joe coughed and faced his men. "Well, boys," he said, "at the last meeting I told you I wanted some new merchandising ideas to start off the fall season. You can use the old ideas just so often, and then you have to bring in new ideas. That's what I want—new ideas. Now, give them to me one by one."

There was a shuffling of feet and some coughing as the employees looked at one another. Each hoped somebody else would start the ball rolling. The silence became embarrassing.

"Don't tell me," Joe chided, "that all of you are too bashful to begin?"

"Well, to tell the truth, Joe, new ideas are hard to come by," Milt said. "I racked my brain a couple of times and I just couldn't deliver. But don't give up hope. I'm one of those delayed-fuse guys. For a long time I can't seem to think of a new idea, and then, wham, it hits me hard."

"Yeah, well let's hope it hits you hard before Christmas or next Fourth of July," commented Pop Henley, who didn't like Milt's brash talk, especially upon the subject of red heads.

Grandpa Speaks

Grandpa Hodgkins raised his hand. "Joe, I'm only a part time worker, but, heck, I got an idear."

Joe smiled. "Good for you, Grandpa. Let's hear it. At 82 and you still have ideas. That's wonderful."

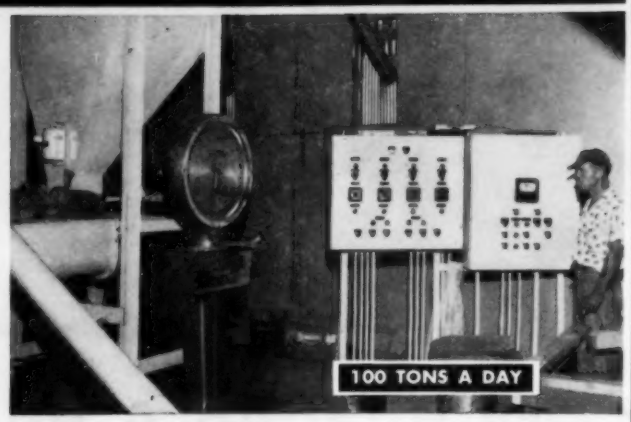
"Now hold on," Grandpa cautioned. "I ain't got all kinds of idears at 82. Not the kind fellers at 20 got. But this is a business idear, Joe. I think mebbee it's a good one."

Grandpa shoved his upper plate back into position with his tongue. "Gotta get that darn thing fixed one of these days," he said. "Now as to this idear, Joe. I was readin' one of them farm magazines the other day. I read an item about how they are driving rats outa barns and mills out in Californy with hi-fi stuff. They made a machine that can issue sounds humans can't hear but which drive rats nuts, and they hightail out of where they are. Pigeons, too."

The employees looked real interested.

"Only trouble is such a machine costs about $300 to $500 to make," Grandpa said. "So why don't we git up a window display full of rat bait now that harvest time is here and the rats are multiplyin'. Let's put in a sign—and maybe run an ad—tellin' about this hi-fi machine that will make rats nuts. Tell farmers, heck there is no use spendin' all that money for a machine like that—yet. Just come in to Joe Brooks' and buy enough rat bait to lick the tar outa the rat population on the

ONE-MAN MILL! THAT'S THE Daffin



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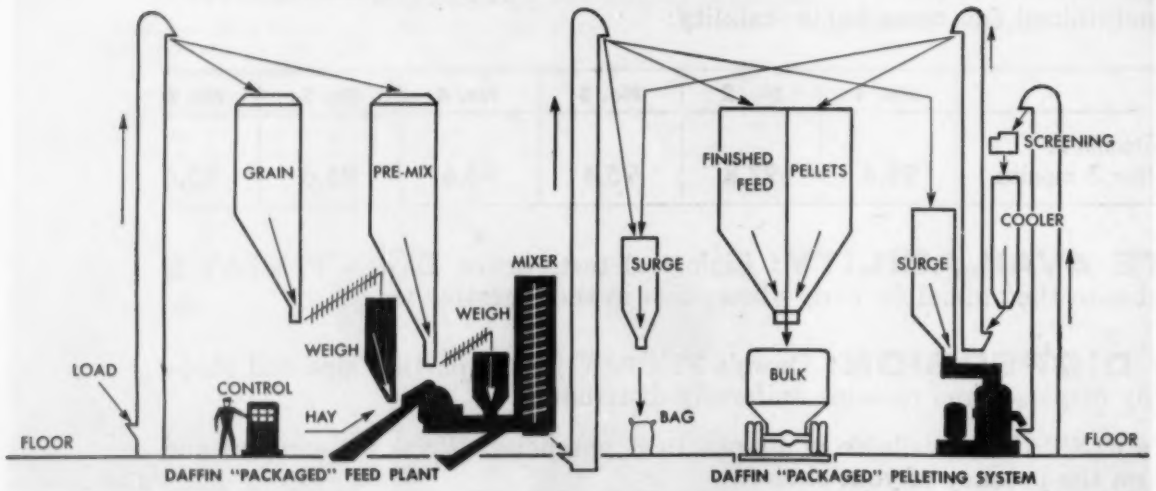

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IF YOU ORDER YOUR NEW DAFFIN TODAY, within two weeks it will be turning out the best finished feed your customers ever had!

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Did you know?

- Since 1930, feed industry output as a whole has risen 175%. The industry is now producing at the rate of about 37,000,000 tons per year.
- Labor costs drop as dairy herds grow. USDA research shows farmers annually spend 129 man-hours per cow caring for a 10-cow herd. But a 30-cow herd needs only 80 man-hours per animal. Thus, a herd can be tripled in size, without even doubling labor costs.

4 benefits from using Sterling Blusalt in your fall feeds

Good results from your fall feeds are especially important. When customers see how well your feeds produce *at the start* of the feeding year, they'll rebuy regularly throughout the season.

One of the best ways to insure this heavy repeat business is to use Sterling trace-mineral Blusalt products formulated especially for feed mixing. You'll benefit in four distinct ways:

1. Correct trace-mineral balance. For better on-the-farm results, every Sterling Blusalt product contains the now-known correct amounts of 7 essential trace minerals (manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc) blended with salt, a natural carrier.

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3. Cut production costs. Whether you specialize in formula feeds or grist mixes, Sterling Blusalt products permit you to add both salt and vital trace minerals in *one* simple operation. No formula changes needed. Simply replace plain or iodized salt with one of the Sterling feed-mixing Blusalt products.

4. Technical service and research with your salt. At International Salt Company's Animal Nutrition Department, we do continuing research on the proper use of salt and trace minerals in modern livestock and poultry feeding programs. Results of this research are passed on to the feed trade in improved Sterling Blusalt products . . . and in comprehensive technical service on questions of feed mixing and feed formulas.

This research and service is yours to use *now* in preparing your fall feeds...or at any other time. Just ask your Sterling representative, or contact our nearest sales office.

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farm. Won't cost no $300. Not half or quarter or eighth as much."

Joe looked admiringly at Grandpa. "Say, that would be an original ad and a window display. Smiley, check into that."

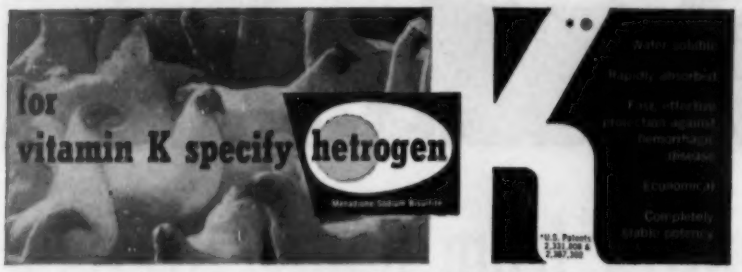
"I will," said the blond employee, who was quite a good sign painter, too. "I'll draw a big rat and maybe post that clipping on a sign, too."

Grandpa Hodgkins scratched his lean chin. "I don't know how this next suggestion will set with the boys," he said, "but I got to thinkin', Joe, that maybe you could assign four of us to digest two farm magazines each per month, and then come to these sales meetings and tell us what's new and how we can use new ideas in our feed business. Nights when the rheumatiz keeps me awake I read my son-in-law's farm magazines—after the jokes, of course—and heck, I see a lot of good stuff in there. If we kin bring this new stuff in agriculture to the attention of our customers, they'll get the idear we are really on the ball."

"Aren't we on the ball now?" asked Milt.

"Sure," said Grandpa, quickly. "But we ain't perfect. And remember there's lots of competitors waiting to take our accounts if we don't service them right."

Joe Brooks smiled. "You've got a sound idea, Grandpa. I'll assign four different fellows each month to review four different farm and feed trade publications, and then come up with ideas we can use. Next—"



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Cargill Announces Executive Changes

MINNEAPOLIS—Retirement of F. J. Hays, board chairman of Cargo Carriers, Inc., transportation affiliate of Cargill, Inc., and election of new Cargill and CCI officers were announced recently by John H. MacMillan, Jr., board chairman of Cargill.

C. MacMillan, Jr.

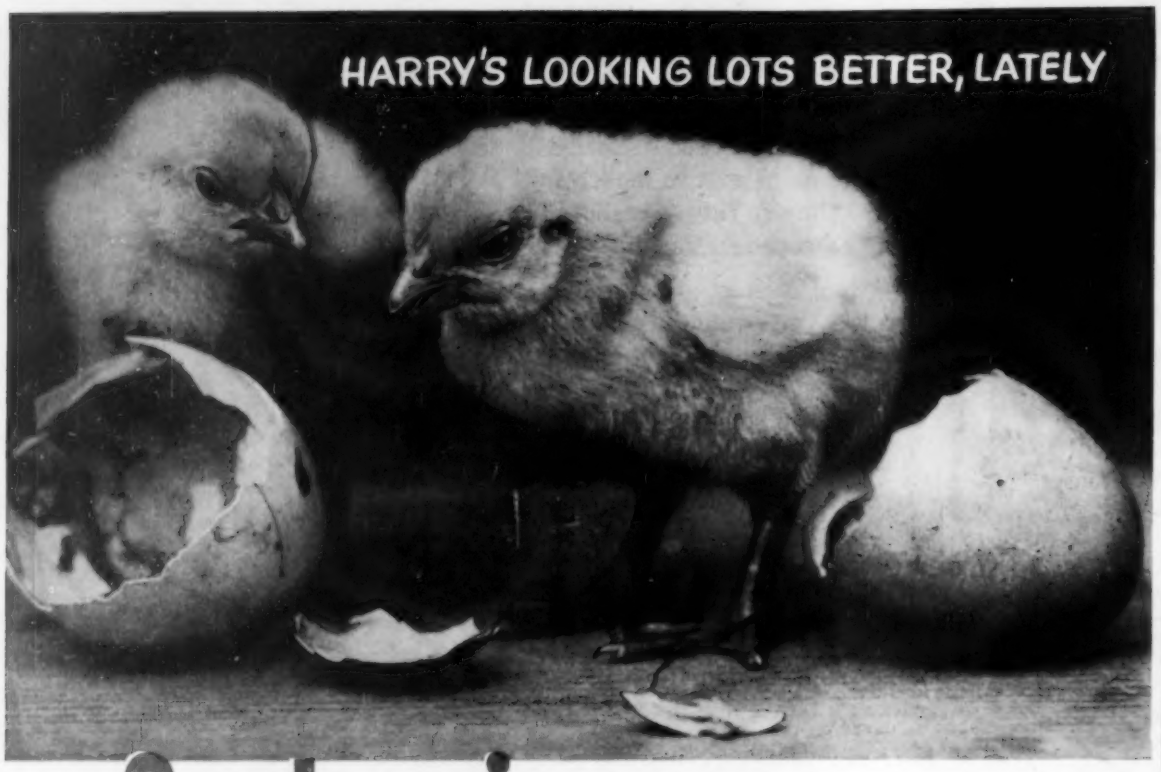
Mr. Hays, who will retire Aug. 31, joined Cargill in 1918 and became CCI's first president when the company was formed in 1930. He was named chairman of the board in 1957.

Other executive changes, all effective now, are: H. Terry Morrison, executive vice president of Cargill, administration, elected vice chairman of the board of directors. He will continue as chief administrative officer. Robert P. Berkey, vice president of CCI, Cleveland, Ohio, elected executive vice president and board member, CCI, Minneapolis, and Cargill MacMillan, Jr., assistant vice president and central regional manager of Cargill's grain division, Chicago, elected vice president, administration, Minneapolis.

Donald R. Brandenborg, assistant vice president and assistant secretary, CCI, elected vice president and secretary; C. W. Mooers, vice president and treasurer, Cargill, elected to assume additional duty of treasurer, CCI; James R. Cargill, Cargill administrative division, elected assistant vice president; Donald W. Kleitsch, St. Louis; John H. MacMillan, III, and Harold A. Gray, Minneapolis, appointed assistant vice presidents, CCI, and Fred E. Steinbach, Jr., appointed assistant secretary, CCI.

GRAND OPENING

GREELEY, KAN. — The Greeley Cooperative Assn. had a grand opening recently for its "Open Formula" feed mill. A special discount was given on all feed orders taken that day for immediate delivery. Construction of the new building, including a large warehouse, was started last winter, but unfavorable weather delayed the completion until the present time. Feed is now being made at the mill.



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most potent, broad-spectrum antioxidant ever developed!

Now you can stop feeding vitamins to the air!

With SANTOQUIN—just ¼ lb. per ton of feed—you can maintain safe vitamin A and E levels with less supplement. And you can be sure there will be no deficiencies in your feed. SANTOQUIN halts loss of vitamins by oxidation in the mixed feed and in the body of the bird.

Learn the whole new amazing story! How SANTOQUIN halts oxidative destruction of vitamins, carotenes, and xanthophylls! How it prevents even traces of unpalatable rancidity! SEND IN THE COUPON FOR COMPLETE INFORMATION.

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—the happiest discovery chemistry has ever made for the feed industry

More profit on feed when you mix your own brand!

BROWER *Whirlwind* FEED MIXER

Earn up to $1.50 profit per bag by mixing your own brand of feed with the BROWER MIXER . . . the extra profits soon pay for it! WHIRLS the ingredients instead of just tumbling them . . . mixes a perfect blend in about 10 minutes . . . fast, economical! Built for years of trouble-free service. Five sizes. World's Largest Selling Mixer!

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Write for FREE CATALOG

ONE GOOD PROMOTION HATCHES ANOTHER.....

EGGtober '58 was cited as the industry's most successful fall promotion.

It's back again in 1959, bigger, better and with greater impact than ever.

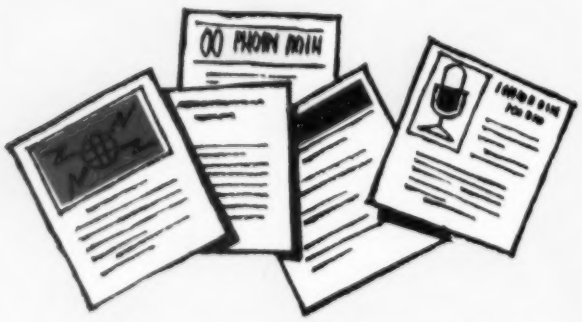
Here's the support that's breaking into action for you...

The big guns are out creating excitement for your laying feeds with Terramycin all across the country.

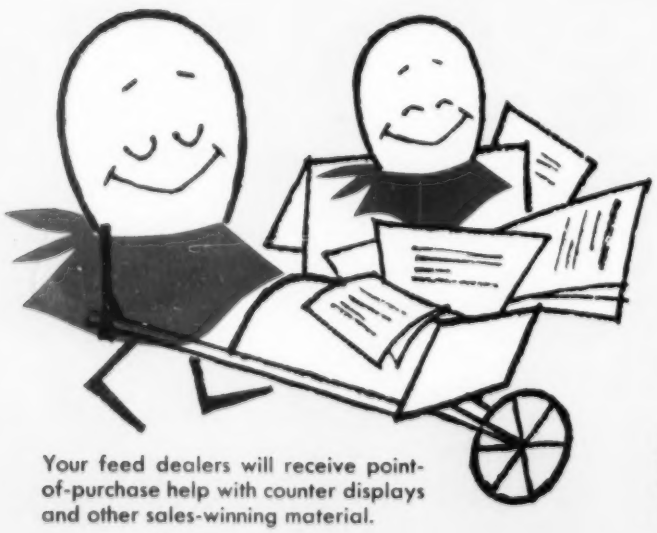
The Eggtober story is a great sales help—the bonus month of eggs from laying feeds with Terramycin that lead to lower production costs . . . but look how Pfizer is getting behind the Eggtober event itself.

Your egg-producer customers will see this hard-hitting story in national ads breaking now and continuing right through the peak promotion period . . . special ads on Eggtober . . . and your feeds that make it possible.

Over 900 billboards will sell Eggtober and your laying feeds at the time customers are in the mood to buy. Billboards are strategically located for peak impact.



Publicity will appear in general and specialized farm magazines in support of the Eggtober idea and your laying feeds with Terramycin.



Your feed dealers will receive point-of-purchase help with counter displays and other sales-winning material.

Leading radio and TV stations will carry the Eggtober cost-cutting message to farmers in the heavy egg-producing areas.

A complete issue of farm and home rotogravure sections of 202 weekly newspapers will feature the event... from the Eggtober symbol on the cover to management help for your egg-producing customers. It's all selling Eggtober and your laying feeds with Terramycin.

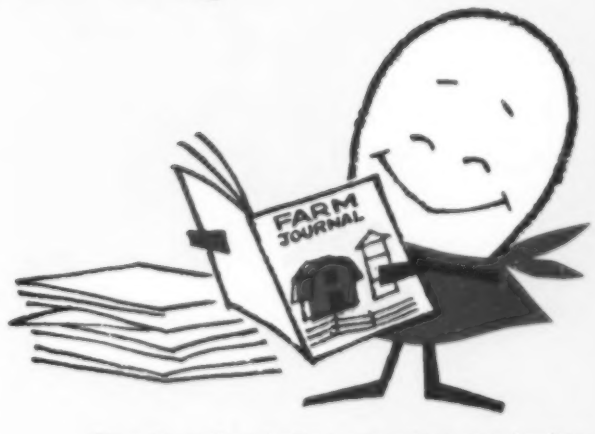
And EGGtober is an industry public-relations event, too

A complete team of egg-marketing specialists has been laying the ground work for a giant egg-consumption campaign. This, too, is Eggtober—the feed industry's contribution to the total egg-consumption picture.

This consumer campaign runs in conjunction with the Eggtober feed promotion, building support for the entire Eggtober idea.

Here's what to expect:

Over 5,000 supermarket outlets have tied in to actively promote Eggtober egg consumption. Food manufacturers who use eggs in their products have joined the parade. Food outlets from coast to coast are receiving special egg tips and merchandising ideas.



Farm Journal and other magazines are lending their merchandising support. The Eggtober issue of several publications will contain new egg recipes and other exciting new ideas for housewives. *Rural Gravure* publications are also sponsoring special egg-cooking schools across the country.

Restaurants, supermarkets and other allied outlets are being provided with tie-in materials, including Eggtober decals, table tents, counter cards and posters. New egg recipes and other promotional releases have been timed to appear in major metropolitan newspapers, on radio and TV during Eggtober.

"Flying Down to Rio"—Winners of ten regional Eggtober events and contests will win free trips to South America via REAL Airlines.

A special lass, Miss Eggtober, will have a busy time appearing at special egg-cooking schools, trade shows, and on radio and TV promoting the use of eggs.

A good promotion deserves to be used for all it's worth

Now you can call them EGGtober Feeds

and tie in more directly with this nationwide promotion

Egg producers like the idea behind Eggtober — the extra month of eggs from laying feeds containing Terramycin. They've learned that Eggtober means production savings . . . from 1¢ to 6¢ less per dozen eggs.

The Eggtober theme is an easy one to remember . . . but to make sure nobody forgets, call your laying feeds that provide these extra bonus benefits, YOUR BRAND of EGGTOBER FEEDS.

That name makes sense because Eggtober is more than an event. It's a year-round saving in production costs. This important point will be made directly to your laying-feed customers through all types of farm media . . . not just at the Eggtober peak promotion period . . . but throughout the year.

It'll help your customers get Eggtober benefits all year long . . . and give you bonus sales from a potent idea.

You see, Eggtober is more than a bonus month of eggs. For you, it's the way to get bonus sales, month in and month out.

Here are the extra benefits (based on college tests) you can sell:

- 6% to 37% increased egg production
- 3.7 to 24% greater feed efficiency

Your Pfizer representative has lots of ideas for ways to tie in with Eggtober and to get the bonus benefits from Eggtober Feeds with Terramycin. Get in touch with him today.

EGGtober Feeds containing potent Terramycin®

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3 Reasons Why Summer Is Void Of Hog Price Rise

BROOKINGS, S.D.—The traditional rise in hog prices didn't show up this summer—and Art Anderson, farm management specialist, South Dakota Agricultural Extension Service, offers three reasons why farmers can't expect to see one.

These three reasons are: (1) Total supplies of pork storage June 1 were 53% above supplies on that date in 1958, (2) the June hot weather reduced the demand for pork and (3) the slaughter of spring pigs began earlier than usual this year because of earlier farrowings. "Hog prices usually will not advance after midsummer," Mr. Anderson said.

Nationally, the pig crop was 12% larger than in 1958. If present indications for fall farrowings materialize, the total 1959 pig crop will be the largest on record in any peacetime year.

Population has increased the total demand for pork, but during the past six years population has expanded 11% while total pork production will probably be increased as much as 16% this year.

"Important changes are taking place in hog production that are affecting the seasonal pattern of hog prices," Mr. Anderson explained. "While this year's pig crop is bigger than the 1955 crop that sent hog prices tailspinning to a national average of $10.60 in December of that year, farmers need not expect such drastic price declines this year."

For one thing, he said, marketings this fall will be more evenly distributed. A larger percentage of the farrowing took place early, in December and January, and fewer sows were farrowed in March and April, the traditional farrowing months. A larger percentage of the 1959 crop will also be produced in the fall.

Mr. Anderson said these changes are the cause of lower hog prices this summer, but these trends should also keep prices from dropping as low in November and December as they did four years ago.

Hog prices probably will be low through 1960, with the lowest point coming in the fall. "If production continues to expand next year, farmers can expect severe price cuts by next fall," Mr. Anderson said.

Grain Freight Rate Reduced in Canada

OTTAWA—The net rail freight costs of western grains to feeders in eastern Canada and British Columbia were reduced Aug. 1 as a result of the reduction in rail freight rates and an adjustment in the government's rates of freight assistance on western feed grains, it was announced recently by Douglas S. Harkness, minister of agriculture.

On shipments to British Columbia, the freight assistance previously absorbed all but $5.40 ton of the direct carlot rail freight rate from Calgary. It will now absorb all but $5 of that rate, reducing the net freight cost to the buyer by 40¢ ton.

In the Montreal freight rate zone of eastern Canada, which includes the eastern part of Ontario, the freight assistance payment remains unchanged at $5 ton. The scale of assistance on shipment to that area was not changed Dec. 1, when the 17% increase in rail freight rates came into effect. The net rail freight cost to the buyer will, therefore, be reduced by the full amount of the Aug. 1 reduction in freight rates.

On shipments to eastern Quebec and the Atlantic provinces, having a rail freight rate from Ft. William of 98¢ cwt. or higher, the freight assistance is now $7.10 ton plus the excess of the freight rate from Ft. William over that to Montreal. As on shipments to British Columbia, this will result generally in a reduction of 40¢ ton in the net freight costs of feed grains to buyers in that area.

The adjustments in the freight assistance policy will keep the freight costs of western feed grains to these various areas in the same relatively uniform position as in the past.

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TRIUMPH CORN SHELLERS

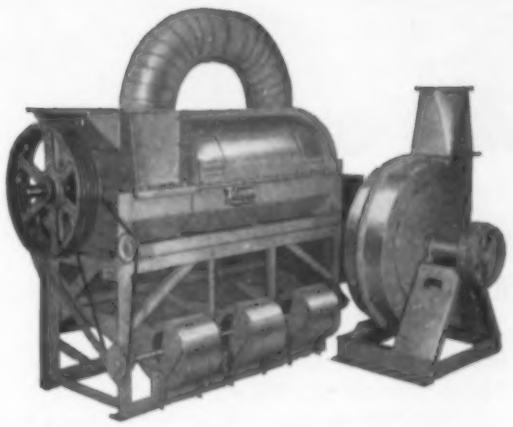
shell, separate and clean the corn; remove cobs, husks and dirt

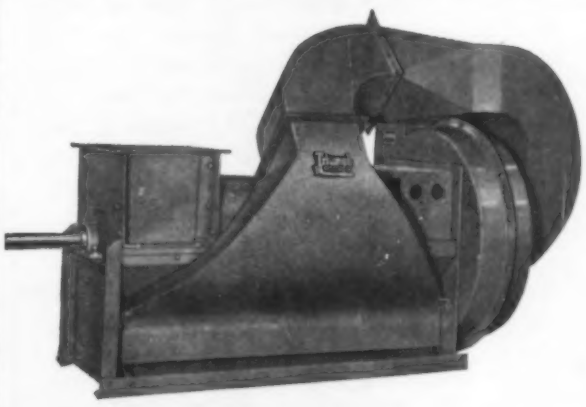
assure fast, efficient, dependable, low cost operation

Improved TRIUMPH No. 1200* Corn Sheller

Complete system including sheller, cleaner and blower. The original and undisputed best. New, improved model assures even less costly operation; better cleaning; easier access to all parts; and more automatic operation. Highly efficient even on high moisture corn, or corn full of husks. Exceedingly compact. Requires little space. Easily adapted to any plant arrangement. Few moving parts. Fully patented. Capacity 40 to 50 tons of machine picked ear corn per hour. Send the coupon today for complete description and specifications!

*U. S. Patent No. 2,754,827.





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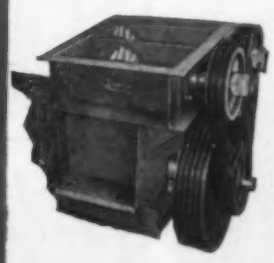
All the patented, proven features of the larger No. 1200 system, but somewhat smaller. Rugged, sturdily built. Fully meets all requirements of grain elevator service. Highly efficient on high moisture corn or corn full of husks. Low intake height. Sheller, cleaner and blower driven with a single motor simplifying installation and operation. Screen, shelling plates and all other internal parts readily accessible. Capacity 30 to 40 tons of machine picked ear corn per hour. Send the coupon today! Get full details and dimensions.



TRIUMPH Double Roll Ear Corn Crushers

Only 10" high. Mounts easily on feed hopper of either a No. 1200 or No. 900 Sheller. Prevents entrance of rocks, tramp iron or other foreign materials. Large capacity. Highly efficient. Double shaft design permits one shaft to operate even though pins in other sheave are sheared. Easily installed. Driven from the sheller. Requires no additional motor. It'll save you time and money! Get full details. Send the coupon today.

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Send full details about:—

☐ No. 1200 Sheller ☐ No. 900 Sheller ☐ Ear Corn Crushers

☐ Have an engineer survey my plant. (No cost or obligation to me)

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Company_____

Address_____ State_____

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in a form so soluble "it melts on your tongue."

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Convention Calendar

Aug. 23-25—Poultry Industries of Louisiana, Inc.; Captain Shreve and Washington Youree Hotels, Shreveport; sec., Clyde Ingram, Louisiana State University, Baton Rouge, La.

Aug. 23-25—The National Hay Assn.; Sir Francis Drake Hotel, San Francisco; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center; Eatonton, Ga.; chm., Arthur Gannon, Poultry Division, University of Georgia, College of Agriculture, Athens, Ga.

Aug. 28—Purdue Swine Day; Purdue University, Lafayette, Indiana; chm., Dr. J. H. Conrad, Animal Science Department.

Sept. 3-4—Symposium on Magnesium in Agriculture; West Virginia University, Morgantown, W. Va.; Dr. G. C. Anderson, head, Animal Husbandry Dept.

Sept. 4—Illinois Cattle Feeders Day, University of Illinois, Urbana; chm., A. L. Neumann, Beef Cattle Division.

Sept. 4—Swine Day; University of Missouri, Columbia; chm., Prof. Leland Tribble, Animal Husbandry Department.

Sept. 9-10—Pet Food Institute; Drake Hotel, Chicago; sec., Clyde Kassens, 332 S. Michigan Ave., Chicago, Ill.

Sept. 9-10—Maryland Conference for Feed Service Men; University of Maryland, College Park; chm., Wade H. Rice, University of Maryland, College Park, Md.

Sept. 10—Florida Swine Day; University of Florida, Gainesville; sec., H. D. Wallace, Animal Husbandry and Nutrition Department.

Sept. 11—Minnesota Swine Feeders Day; Peters Hall Auditorium, University of Minnesota, St. Paul, Minn.; Prof. R. J. Meade, Animal Husbandry Department.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 14-15—Minnesota Animal Nutrition and Health Short Course; University of Minnesota, St. Paul 1; chm., Dr. J. O. Christianson, Department of Agricultural Short Courses.

Sept. 15-16—Mutual Millers & Feed Dealers Assn.; Jamestown, N. Y.; sec., Margaret Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Sept. 15-17—Dixie Poultry Exposition, Asheville, N.C.; sec., N. B. Nicholson, Monroe, N.C.

Sept. 17—Illinois State Turkey Growers Assn., farm of Clarence Ziemer, Elmwood, Ill.; sec., S. B. Swann, Kauffman Turkey Farms, Waterman, Ill.

Sept. 17-18—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Sept. 18—College-Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.

Sept. 23—Minnesota Beef-Grassland Field Day; Rosemount Experiment Station, Rosemount, Minn.; chm., Dr. J. O. Christianson, Department of Agricultural Short Courses,

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

● ● ●

Aug. 28—South Dakota Swine Field Day; South Dakota State College, Brookings.

Oct. 8-9—Alabama Animal Nutrition and Management Conference; Duncan Hall, Alabama Polytechnic Institute, Auburn; sponsored by Alabama Feed Assn., sec., Merlin Bryant, Brundidge Milling Co., Inc., Brundidge, Alabama.

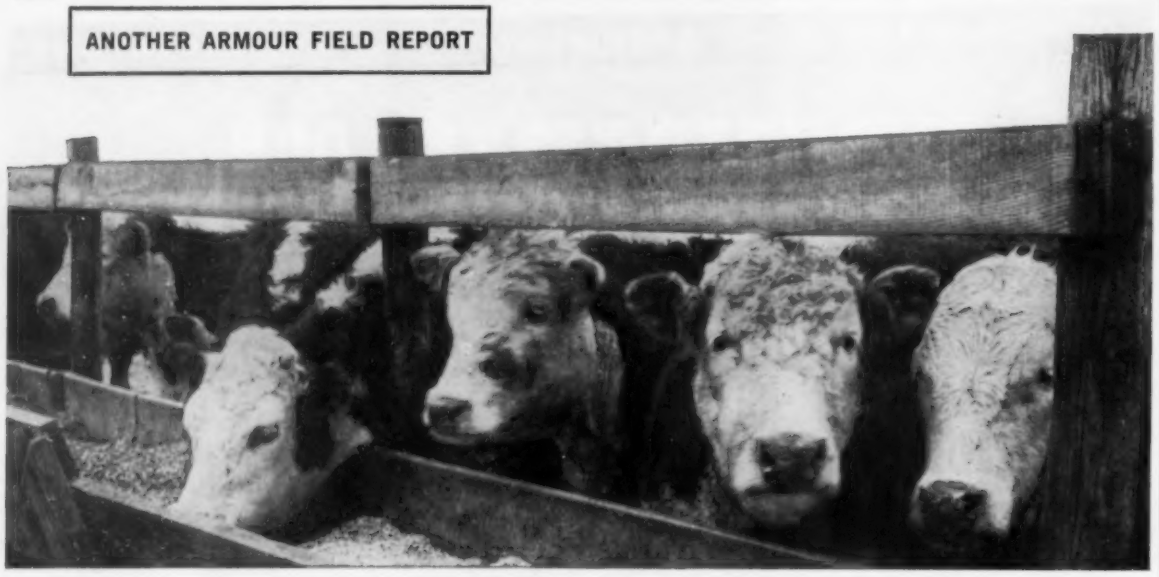
Nov. 18—School for Poultry Servicemen; University of New Jersey, Agricultural Experiment Station, New Brunswick; chm., R. L. Squibb, Department of Poultry Science.

Dec. 2—Ontario Retail Feed Dealers Association; King Edward Sheraton Hotel, Toronto; sec., Murray McPhail, 69 Yonge Street, Toronto.

1960

Mar. 17-18—Maryland Nutrition Conference; Shoreham Hotel, Washington, D. C.; chm., Richard D. Creek, University of Maryland, Department of Poultry Husbandry, College Park.

ANOTHER ARMOUR FIELD REPORT



Max Rosenstock, Idlewild Farm, Kingsley, Iowa finds DYNAFAC improves grade, practically eliminates feedlot bloat and founder, keeps cattle on feed better!

Max Rosenstock and his partner, Clarence Voss, have been feeding DYNAFAC for the past two years:

"It looked like a good product," they said. "We felt it deserved a fair trial under actual feedlot conditions. After testing it, we were so completely satisfied, that DYNAFAC is now a standard part of our feeding program."

"Dynafac gives us a number of direct benefits," says Mr. Rosenstock. "Since we started feeding it, we've had no trouble with bloat, and cattle stay on feed better—even with a high grain ration. The carcass quality of our animals is much higher, and they grade higher."

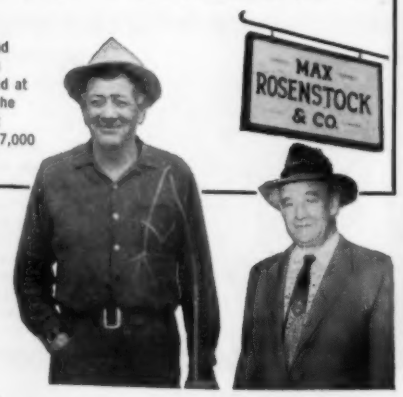
"When you add this to an average daily gain of 2.6 to 2.7 lbs. over a two-year period, you can see why we're sold on Dynafac!"

Mr. Rosenstock and Clarence Voss are only one example of the many progressive feeders who are switching to Dynafac. They represent a large and growing market for this proven feed additive.

Dynafac's big promotional program is designed to help you get your share of this business. Plan to add Dynafac to your formulas and concentrates. Write for prices and complete facts.

In 16 separate tests, in 6 states, averaging over 60 head per test, Dynafac showed a positive advantage sixteen times. Increase in daily gains ranged from 0.12 to 0.75 lbs. per head — averaged 0.32 lbs./day in favor of Dynafac feeding.

Max Rosenstock and Clarence Voss have 4,000 cattle on feed at all times. During the year, they turn out between 6,000 and 7,000 head of cattle.

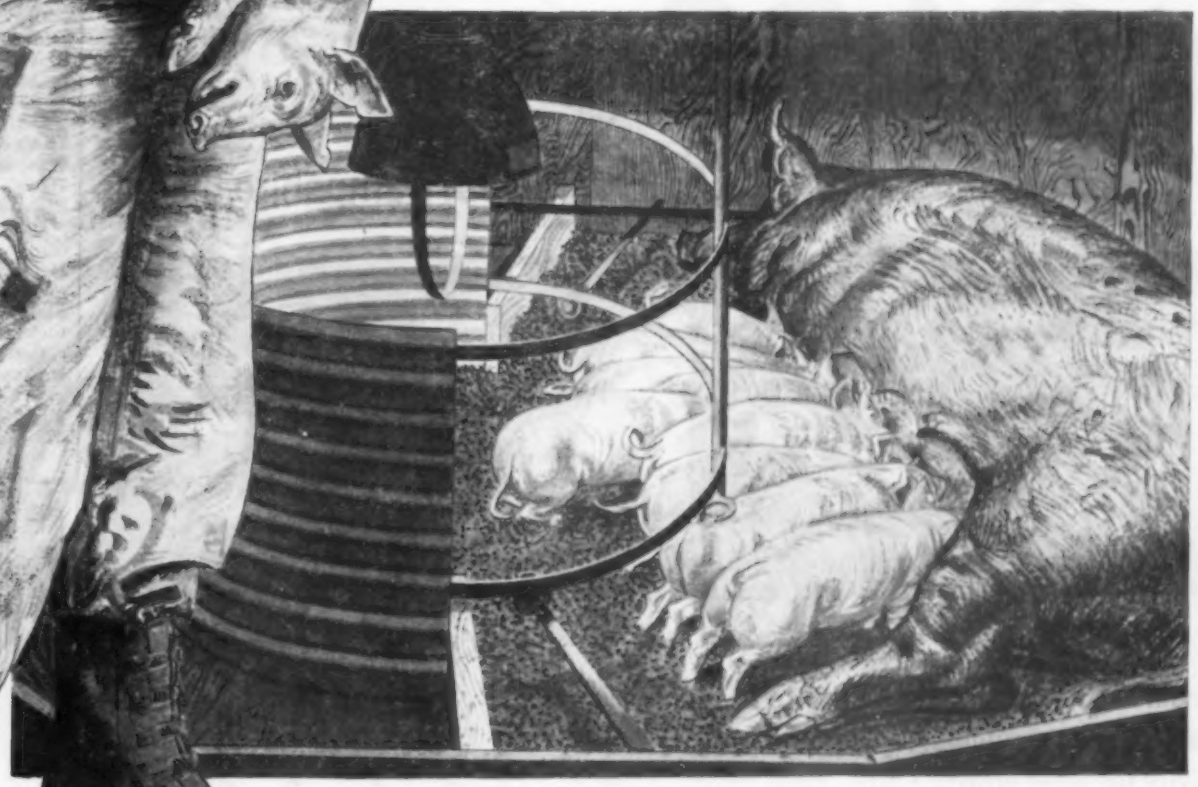


DYNAFAC PREMIX

A product of Armour and Company, Chicago 90, Ill.

Distributed nationally by McKesson & Robbins, Inc.

Pigloos® help him raise 900 hogs a year with half a man's labor. A Pigloo is a unique housing unit that imitates nature. It permits sows to farrow in natural isolation, and protects young pigs from disease. It is provided exclusively by Nutrena Mills, a feed division of Cargill. Because the pigs practically care for themselves in the Pigloo System, the farmer can raise 900 hogs a year with only half a man's labor. And look at the pigs it saves—records over a three year period show that 95.5% of Pigloo-raised hogs live from farrowing to weaning. That's better than the estimated national average by 36%. Thus Pigloos, as part of a complete Nutrena hog management system, help the farmer do a bigger, better job. It's another way Cargill, and its divisions like Nutrena, help extend the reach of an important businessman—the American farmer.



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CALENDAR FOR 1959-60

AUGUST

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University of Minnesota, St. Paul 1.

Sept. 23—Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington, Vt.; sec., D. C. Henderson, H111s Agricultural Science Building, Burlington, Vt.

Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 24-26—Pennsylvania Millers & Feed Dealers Assn.; Yorktowne Hotel, York, Pa.; sec., Donald W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 26—Small Mill Short Course; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 29-30 — Pacific Northwest Garden Supply Trade Show; Masonic Temple, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Oct. 1-2—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Oct. 6-8 — Northeastern Poultry Producers Council Exposition and Convention; Farm Show Building, Harrisburg, Pa.; chm., Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-14—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Cumberland Falls State Park, Corbin; sec., John W. Tuttle, 730 Rose St., Lexington, Ky.

Oct. 14—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 15-16—Michigan Feed & Grain Dealers Assn.; Kellogg Center, Michigan State University, East Lansing, Mich.; sec., Nevels Pearson, P.O. Box 472, East Lansing, Mich.

Oct. 19-20—Beef Research Conference (attendance by invitation); Pur-

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standardized special blend of Milk and Grain fermentation factors providing...standardized whey factor activity for surer growth • 50% more protein • easier handling—free-flowing, no caking • guaranteed riboflavin content of 14 mg. per pound • year 'round availability • low lactose • **and it carries transit**

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. . . that's how customers describe their delivery of

Coronet Granular DIKAL and Coronet Defluorinated Phosphate

GUARANTEED UNIFORM ANALYSIS

CORONET DEFLUORINATED PHOSPHATE

PHOSPHORUS	CALCIUM	FLUORINE
18.0% min.	31.0% min. 34.0% max.	0.18% max.

Screen analysis: All through 14 mesh; 80% on 200 mesh, plus or minus 5%.

CORONET GRANULAR DIKAL

18.5% min.	21.0% min. 24.0% max.	0.12% max.

Screen analysis: All through 20 mesh; 80% to 90% on 200 mesh.

Better Service . . . by rail and extensive private truck facilities . . . provide Coronet customers dependable deliveries around the clock.

Whether you manufacture feed in California, Colorado or Carolina, you'll be pleased with the better delivery service you receive when you use Coronet phosphorus feed supplements.

Let us figure the cost of **CDP** or **DIKAL** delivered to your plant. The better service comes free. Let us prove it!

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Satisfaction for your customers!
A pleased customer is a repeat customer. And Kasco gives your customers more of what they want in a dog food—top condition for their dogs at a lower cost per serving.

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Kasco maintains a "professional" sales force to work with you—for you in giving service to your customers. You are free to call on these men at any time.

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CORN PRODUCTS COMPANY

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YOU GET ALL **3** ALL OF THE TIME

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Consumption of PILOT BRAND Oyster Shell continues without interruption . . . day in and day out, every day of the year. Hens and turkeys, chicks and poults must have it because calcium carbonate is as important to their lives as water.

It is this constant use, plus the fact that pure, 100% usable PILOT BRAND is the largest selling eggshell material in the world, that causes progressive dealers everywhere to always stock and push PILOT BRAND as a matter of course. It always brings steady sales and good profits. And turnovers are so fast, you never have much money tied up in stock.

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FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

due University, Lafayette, Ind.; sponsored by Agricultural Research Institute and National Academy of Sciences-National Research Council; Dr. C. B. Cox, Agricultural Economics Department, Purdue University.

Oct. 19-20—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Berton Maxwell, Poultry Producers of Central California, Petaluma.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.

Oct. 22-23—Iowa Seed Dealers Assn.; Savery Hotel, Des Moines; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines 9, Iowa.

Oct. 23—Arkansas Poultry Study Day; University of Arkansas, Fayetteville; Prof. Robert M. Smith, Department of Animal Industry and Veterinary Science.

Oct. 29—Nebraska Feed & Nutrition Conference; University of Nebraska, Lincoln; chm., Dr. John Adams, Poultry Husbandry Department.

Oct. 29-30—West Virginia Feed Dealers Assn.; Blackwater Falls Lodge, Davis; sec., J. S. Larrick, Beckley Ice & Feed, Beckley, W. Va.

Oct. 30—Rooters Day; University of Nebraska, Lincoln; Dr. E. R. Peo, Animal Husbandry Department.

Oct. 30—Illinois Sheep Producers Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Department of Animal Science.

Nov. 4-5—Illinois Feed Assn. and Illinois Poultry Improvement Assn., joint convention; Armory, Springfield, Ill.; IFA, Leland Hotel; sec., Dean M. Clark, Board of Trade Bldg., Chicago; IPIA, St. Nicholas Hotel; sec., Aubrey Harless, Box 91, Shelbyville, Ill.

Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.

Nov. 5-6—Florida Nutrition Conference; University of Florida, Gainesville; sponsored by Florida Feed Dealers Assn. and Florida Agricultural Experiment Station; chm., Dr. J. P. Feaster, Department of Animal Husbandry and Nutrition.

Nov. 6-7—Oklahoma Formula Feed Conference; Oklahoma State University, Stillwater; chm., Dr. Rollin H. Thayer, Poultry Science Department. Jackson Blvd., Chicago 4, Ill.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

Nov. 16—Tennessee Feed Manufacturers Assn., Claridge Hotel, Memphis, Tenn.; sec., Charles H. Warfield, American Trust Bldg., Nashville, Tenn.

Nov. 16-17—Washington Animal Industry Conference; Yakima Junior College, Yakima, Wash.; John G. Wilson, Washington State Feed Assn., Inc., 814 Second Avenue Bldg., Seattle 4.

Nov. 19-20—National Swine Industry Conference; Iowa State University, Ames; chm., Keith Myers, National Swine Growers Council, Grundy Center, Iowa.

Nov. 22-24—Western Grain & Feed Assn. of Iowa; Fort Des Moines Hotel, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines 9, Iowa.

Nov. 27-28—American Society of Animal Production; Sherman Hotel, Chicago, Ill.; sec., Dr. H. H. Stonaker, Colorado State University, Ft. Collins, Colo.

Nov. 30-Dec. 1—Midwest Veterinary Nutrition Conference; President Hotel, Kansas City; sec., Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th Street Bldg., Kansas City 5, Mo.

Dec. 3-4—North Carolina Animal Nutrition Conference; North Carolina State College, School of Agriculture, Raleigh; chm., E. R. Barrick, Head, Animal Husbandry Section.

Dec. 8-9 — Poultrymen's Service Clinic; Cornell University, Ithaca, N.Y.

1960

Jan. 4-5—Kansas Formula Feed Conference; Kansas State University, Manhattan, Kansas.

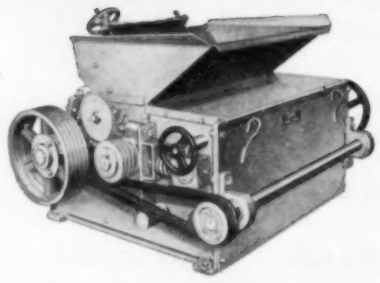
Jan. 5-7—National Turkey Federation; Hotel Leamington, Minneapolis; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 17-19—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis, 4, Ind.

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec. Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 4-5—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; chm., Dr. J. E. Park-

WHAT DO YOU LOOK FOR IN A ROLLER MILL?



PERFORMANCE?
QUALITY?
PRICE?

W-W HAS THE MOST TO OFFER!

Any way you look at it, W-W has the finest roller mill built. It crimps, or cracks, or crumbles every kernel of grain with a minimum of fines. It has precision control wheels, instead of levers. Rolls never clash when running empty. Special 10" diameter chilled, cast alloy rolls are hardened through entire wall, can easily be regrooved time and again — comes in 6" sections, a convenient roller exchange regrooving service is available at low cost. Framework is of heavy cast iron (instead of boiler plate). Sizes available from 6" to 36" width — adaptable to any source of power. See W-W, compare it... you'll buy it.

Write for free literature and prices on W-W Roller Mills.
Ask about liberal terms and time-payment plan.

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A *Lilly* MESSAGE TO THE MAN WHO WANTS TO SELL MORE FEED

These 13 college tests show how Hygromix helps good feeds do their best

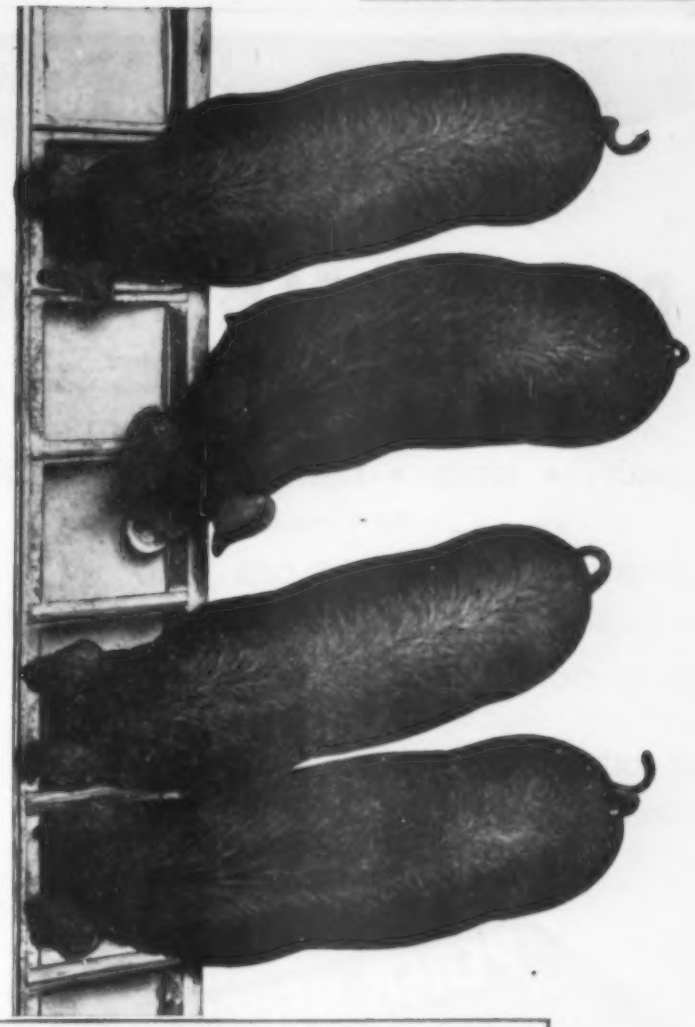
Swine worms take their toll from the performance of any feed. Notice how continuous worm control helped these swine rations produce faster gains on less feed.

Before Hygromix was discovered, experts agreed that swine worms cost the farmer with hogs from 7 to 10% in lost gains and feed.

This loss to the hog raiser *can also be considered as an apparent loss of nutritional value* . . . from your feeds!

The results of these college feeding trials, and the evaluations of Hygromix as an anthelmintic, prove the benefits of day-by-day worm control.

Insure your good feeds against this hidden loss to hungry, damaging worms. Help your feeds deliver full nutritional power to hogs during their critical growing period.



HYGROMIX SWINE-FEEDING DATA FOR THE GROWING PERIOD

Station	Avg. No. Pigs Per Treatment	No. Days on Test	Average Starting Weight Control	Hygro.	Reported Progress Wt. Nearest 100# Control	Hygro.	Avg. Daily Gain Control	Hygro.	Feed Required Per Pound Gain Control	Hygro.	% Inc. Daily Gain	% Decrease Feed Required
Ohio (Drylot)	8	70	35	35	132	141	1.37	1.51	3.22	3.01	10.2	6.5
Ohio (Pasture)	20	56	38	38	118	123	1.42	1.51	2.81	2.79	6.3	0.7
Nebraska (Drylot)	19	76	38	38	135	138	1.27	1.37	3.53	3.26	7.9	7.6
Nebraska (Pasture)	19	76	37	39	146	160	1.42	1.59	2.99	2.90	12.0	3.0
Purdue (Drylot)	11	42	37	37	88	94	1.22	1.36	3.40	3.22	11.5	5.3
Purdue (Concrete & Soil)	10	49	32	32	84	84	1.05	1.06	3.03	2.95	1.0	2.6
Purdue (Concrete)*	10	49	32	32	93	99	1.24	1.35	2.86	2.85	8.9	0.3
N. Carolina (Concrete)	43	56	38	32	107	95	1.23	1.12	3.51	3.28	−8.9	6.6
N. Carolina (Pasture)	44	56	36	32	100	94	1.10	1.10	3.28	3.05	0.0	7.0
S. Dakota	24	39	45	45	101	106	1.43	1.61	2.99	2.74	12.6	8.4
Uni. of Alberta*	8	31	14	14	38	42	.79	.91	2.05	1.91	15.2	6.8
Uni. of Alberta	8	31	14	14	38	44	.77	.96	2.23	1.95	24.7	12.6
Michigan State	18	89	31	31	121	121	1.36	1.41	3.20	3.00	3.7	6.2
										Average of tests:	8.1	5.7

*Pigs in these lots were wormed once with purge-type wormer.

HERE ARE EXCERPTS FROM SUMMARIES MADE BY EXPERIMENTERS AT STATE COLLEGES ABOUT THE EFFECTIVENESS OF HYGROMIX

Purdue . . . Hygromycin effectively controlled roundworms, nodular worms, and whipworms, as shown by ova counts taken and by worm counts obtained at slaughter. *Purdue Swine Day—Mimeo A. S. 242, August, 1958*

Nebraska . . . Hygromycin B is highly effective and more nearly meets the requirements of an ideal wormer than any of the former compounds. *"Worm Eggs Cost You Money"—University of Nebraska, E. C. 1902*

Ohio State . . . The reduction in the number of ascaris (roundworm) and nodular-worm ova in the treated groups would indicate that this feed additive (Hygromix) is very effective in the elimination of these internal parasites of swine. *Swine Day, 1957—Animal Science Mimeo 106*

Wisconsin . . . Hygromycin hits harder than other drugs. The new drug gets whipworms, which no other drug has been able to touch. It acts partly by blocking reproduction of the parasites . . . an ideal way to stop the worms before they do the damage. *Press Release—University of Wisconsin, December 16, 1957*

South Dakota . . . Hygromycin controlled roundworms effectively, as there were no roundworm ova present in the feces of any pigs receiving either hygromycin or the combination of hygromycin and chlorotetracycline. *Swine Field Day—September 11, 1958*

Missouri . . . Hygromycin was effective in reducing the roundworm egg count. *"The value of various antibiotics for growing fattening swine" Swine Day—September 5, 1958*

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DEVOLD VITAMIN A OILS

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er, Poultry Husbandry Department.

Feb. 8-9—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 8-9—Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg. Kansas City 5, Mo.

Feb. 10-11—Pacific Northwest Feed Mill Production School; Chinook Hotel, Yakima, Wash.; sponsored by Washington State Feed Assn., mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 11—Boston Grain and Flour Exchange Annual Banquet; Sheraton-Plaza Hotel, Boston; chm., Paul Sutliff, 177 Milk St., Boston, Mass.

Feb. 12—Washington State Feed Assn.; Chinook Hotel, Yakima, Wash.; annual convention; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 21-23—Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., G. E. O'Brien, 694 N. Ohio Street, Greenville, Ohio.

Feb. 22-23—Virginia Feed & Nutrition Conference; Hotel Roanoke, Roanoke; J. Paul Williams, sec., Virginia State Feed Assn., 615 E. Franklin St., Richmond, Va., or Prof. Paul M. Reaves, Department of Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 17-18—Oregon Feed & Seed Dealers Assn.; New Sheraton Hotel, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

April 1-2—Texas Grain & Feed Assn., Shamrock Hotel, Houston; sec., Ray B. Bowden, 407 Fort Worth Club Bldg., Ft. Worth 2, Texas.

April 5-7—Nebraska Grain & Feed Dealers Assn.; Pershing Municipal Auditorium, Lincoln; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

April 11-13—Poultry and Egg National Board, LaSalle Hotel, Chicago, Ill.; mgr., Floyd Geil, 8 S. Michigan Ave., Chicago 13, Ill.

April 21-23—California Hay, Grain & Feed Dealers Assn., Ambassador Hotel, Los Angeles; sec., John Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

April 21-23—Kansas Grain & Feed Dealers Association; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 22 — Nebraska Livestock Feeders Day; University of Nebraska, College of Agriculture, Lincoln; chm., Wm. J. Loeffel, Animal Husbandry Dept., Lincoln 3, Neb.

May 9-11—American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

Grain Firm Settles Suit Against 2 Banks

MOBILE, ALA.—A $10 million suit brought by Leval & Co., New York grain firm, against the First National and the Merchants National banks in Mobile, was settled out of court this week for a combined total of $375,000.

Leval & Co. brought the suit against the banks as a result of their dealings with L. V. Butler, former operator of the Alabama grain elevator at the Alabama state docks in Mobile. The firm charged that Mr. Butler sold them a half million bushels of non-existent soybeans in 1955, and that the money was used by the grain elevator to pay off Mr. Butler's debts to the banks.

The two banks said in a joint statement, "The decision to settle was reached notwithstanding the confidence of the banks and counsel that after long and costly litigation the banks would be completely successful if the cases were tried."

FEED DEALER DIES

BIG SPRING, TEXAS—A. E. McCuistian, veteran feed dealer, has died following an extended illness. Mr. McCuistian owned the Red Chain Feed Store for several years until his retirement a few months ago.

STILL ON THE ADVANCE...
THE B&L COMPLETE MOBILE FORMULA FEED BLENDER
Offering Unmatched Maneuverability and Ease of Operation!

B&L

Here's the modern mobile feed plant that grinds, mixes, and blends — produces any formula feed right at the barn door. It carries a full day's supply of molasses and supplement, and features micro-ingredient supplement and medicant mixing . . . high speed molasses blending. Top quality feeds from farm grains and roughages.

STANDARD EQUIPMENT ON THE B&L FORMULA FEED BLENDER — The first practical mobile baled hay grinder grinds round and square bales with equal ease.

• GRINDS WHOLE BALES WITH NO EFFORT • LARGE FEED TABLE — 30" ABOVE GROUND • POWER DRIVEN GATHERING FINGERS • VARI-SPEED FEED DRIVE • COMPLETELY ENCLOSED WHEN NOT IN USE • NO EXTRA POWER NEEDED • UTILIZES FULLEST EQUIPMENT EFFICIENCY

BACKED BY MORE THAN 100 YEARS EXPERIENCE IN FEED AND GRAIN PROCESSING MACHINERY

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It's DANNEN for GRAIN and FEED INGREDIENTS

• Bran • Shorts
• Linseed Meal
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• Defluorinated Phosphate
• Feed Supplement Urea
• Dried Skim Milk
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Trithiadol's superior effectiveness has been proved in commercial use (where it counts most), as well as in extensive laboratory and field tests.

2. **Trithiadol gives top feed conversion.**

Impartial controlled testing against 4 leading coccidiostats showed that Trithiadol gave as much as $40 EXTRA PROFIT per 1000 birds. Tests were run by 21 leading feed manufacturers over a period of 15 months.

JOIN THE BIG SWING TO TRITHIADOL TO . . .

Effectively control coccidiosis in your flocks...Get top feed conversion...**EXTRA PROFITS.**

U.S. Pat. Nos. 2,836,539 and 2,844,509

Only TRITHIADOL has all these major advantages

1. Effectively controls all economically important species of coccidia.
2. Completely safe for poultry; harmless to other warm blooded animals.
3. Superior feed conversion and weight gain.
4. Permits immunity to develop early.
5. Displays no adverse effects on egg production, shell or interior quality.
6. Comparatively no effect on hatchability or fertility.
7. Is compatible with all commonly used feed ingredients.
8. Stable, free flowing, easily blended with feeds.
9. Effectively reduces large roundworm and tapeworm burden—a substantial aid in any worm control program.

See your Sterwin Technically Trained Representative or write, wire or phone collect for facts and figures on Trithiadol.

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DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7625—Equipment Catalog

Processing equipment for various industries is illustrated and described in a four-page bulletin (No. 59) released by the Bauer Bros. Co. Equipment shown for use in pulverizing, fiberizing, granulating and blending various materials includes the Bauer hammer mills, double and single disc attrition mills, single and double roll crushers and magnetic separators. Many other types of equipment are described. For copies, check No. 7625 on the coupon and mail.

No. 7623—Dual Motor Vibrator

Cleveland Vibrator Co. announces production of a dual motor vibrator —geared for synchronous action. Designated Model RC2-50, the unit produces straight line vibration in any direction. This unit operates on a rotating eccentric weight principle and features adjustable eccentrics, permitting force of vibration to be varied without changing weights, the company said. There are four weights, two on each motor, contra-rotating. Variable impact range is from 640 to 2,200 lb. and any impact change can be made in a matter of minutes. Because there are no pulleys or belts within the totally-enclosed vibrator, operation is almost noiseless. Details on specifications and other data can be obtained by checking No. 7623 on the coupon and mailing to this publication.

No. 7626—Crusher Bulletin

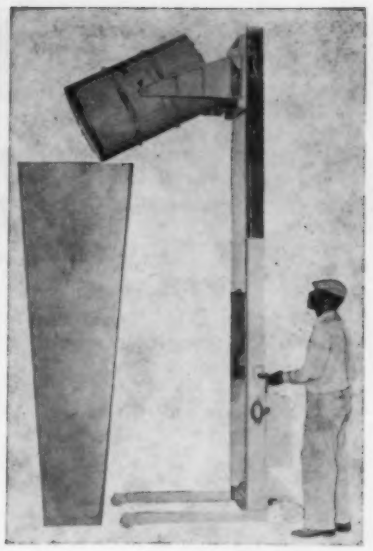
Pulverizing Machinery Division of Metals Disintegrating Co., Inc., has announced the publication of the Mikro Crusher Bulletin, No. 54-C. The illustrated bulletin contains construction features, general application notes and specifications. Diagrams and charts are included. For copies of the bulletin, check No. 7626 on the coupon and mail.

No. 7628—Dairyman's Promotion

Hess & Clark, Inc., announces a fall "Dairyman's Special Promotion" which will offer 12 Pen-FZ Syringes, one NFZ Puffer and one free Taylor Dial Thermometer. The promotion is packaged in a three-color "packer." The thermometer can be used both indoors and outdoors and comes in black and red colors. The Pen-FZ Syringes are used for controlling mastitis. The NFZ Puffer is used for protection against wounds, cuts or scratches. For details about the offer, which expires Nov. 13, check No. 7628 on the coupon and mail.

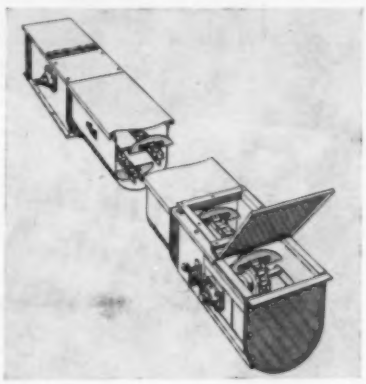
No. 7622—Power Drum Handler

The addition of powered high-lift models to its line of drum handlers has been announced by Specialty Machinery Corp. The models employ a telescoping mast which permits a low, close height for easy maneuvering ability, the company said. The handler is designed for one man to handle, raise, lower, rotate and dump loaded drums. Model 796 will pick up a drum from either a horizontal or vertical position, will elevate up to 800 lb. to a height of 8 ft. with the drum vertical or 8 ft. 7 in. with the drum horizontal. In the pouring position the drum head extends to 10 in. past the wheels. The model is available in three drives—battery powered with built-in charger, air motor or explosion proof A.C. electric. A variety of accessories is available. For details check No. 7622 on the coupon and mail.



No. 7627—Drag Plate Conveyor

The announcement of the addition of a drag plate conveyor to its line of materials handling equipment was made by Strong-Scott Manufacturing



Send me information on the items marked:

- ☐ No. 7617—Large Grain Bin
- ☐ No. 7618—New Catalog
- ☐ No. 7622—Power Drum Handler
- ☐ No. 7623—Dual Motor Vibrator
- ☐ No. 7625—Equipment Catalog
- ☐ No. 7626—Crusher Bulletin
- ☐ No. 7627—Drag Plate Conveyor
- ☐ No. 7628—Dairyman's Promotion
- ☐ No. 7629—Moisture Barrier
- ☐ No. 7630—Automatic Implanter

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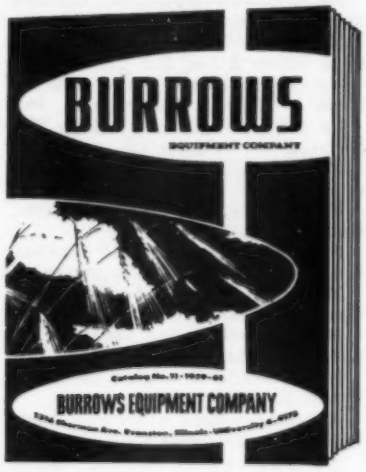
Co. According to company literature, features of the conveyor include: snap-on, dust-tight covers; clam-shell type intermediate discharge gates that fit flush with conveyor trough, eliminating any dead pockets; rubber-hinged door on discharge end for quick inspection, and modern design and construction. The paddles are made of a hardened fibre that resists wear. It is a self cleaning conveyor, operating on low horsepower and capable of carrying high capacity loads, the company said. It is available in 9 in., 12 in., and 14 in. width models. Check No. 7627 on the coupon and mail for details.

No. 7618—New Catalog

A new equipment catalog has been published by Burrows Equipment Co. The catalog, No. 11, comprises a source of equipment and supplies for



the grain, feed and seed industries. According to the company, the catalog is bigger than ever and contains information about a number of new items. For a free copy, check No. 7618 on the coupon and mail.

No. 7617—Large Grain Bin

A "Giant Grain Bin" has been introduced by Martin Steel Corp. Available in 13 sizes, the new bin provides capacities ranging from 5,600 to 15,300 bu. for all small grains, soybeans and shelled corn. According to the company, the bin can be used for aeration as well as storage, with aerating equipment optional. It is constructed of heavy, reinforced 24-in. wall sheets. Other features include a ground-opening ridge cap and a combination rubber and steel ridge collar to prevent entry of snow, sleet or rain; soft lead washers for permanent caulking at bolt levels and positive weather seal and heavy anchoring brackets. The Giants come in 24 ft., 8 in. diameters in 13 heights. For more information, check No. 7617 on the coupon and mail to this publication.

No. 7630—Automatic Stilbestrol Implanter

An automatic implanter, coupled with a one-pellet diethylstilbestrol program, has been announced by Vineland Laboratories, Inc. The magazine of the implanter holds more than 150 pellets and one loading lasts for an hour or more, the company said. The same injector takes both the 24 mg. and the 36 mg. Beefaid pellet without changing needles or magazine. The pellet is implanted in the ear of the animal, with no preliminary slitting of the skin necessary. The surgical-type hypodermic needle of the "gun" slips under the skin for the proper implanting. A cocking operation loads it for the next animal. A folder describing the implanter and the pellet program is available. For copies, check No. 7630 on the coupon and mail.

No. 7629—Moisture Barrier

A chemical product for sealing grain storage concrete floors has been announced by Knott Chemical Co. The liquid sealer, called "Dri-Flor," has locked out all moisture which might otherwise come up from the ground

MIXERS'
PULVERIZED OATS
A competitively priced grade that has a record for improving the quality of mixed feeds. Also available in pelleted form.
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IRRADIATED DRY YEAST
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Save More Pigs to Eat Your Feed— with

PA-12

THE ORIGINAL U.S.-MADE INJECTABLE SOLUTION OF IRON AND VITAMIN B-12

During the past year America's hog feeders have successfully treated over THREE MILLION baby pigs with Specifide's PA-12, the original U. S.-made injectable iron with added vitamin B-12. And, those same feeders will be back for more PA-12 this season, confident that it will do the job better . . . that it will promote faster gains and help guard against iron deficiency disorders at the lowest cost per pig.

You can help your hog raisers do the best possible job with your feeds and feeding programs by selling them PA-12, the safe, dependable, *low-cost* injectable iron.

Your jobber has PA-12, or can get it for you at once. For complete information and quick service, wire, phone or write . . . NOW . . . to:

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HERE'S WHY YOU SHOULD SELL PA-12

1. Promotes faster gains . . . on less feed!
2. Protects against iron deficiencies.
3. Injected under the skin . . . NO HAM DAMAGE!
4. Carries *added* vitamin B-12 to help build rich, red blood!
5. Only 1 cc. required . . . costs the feeder only *fifteen cents!*
6. Helps keep pigs alive to eat your feed! Every dead pig represents a loss of 600 pounds of hog feed business!
7. Backed by every kind of promotion . . . farm paper ads, posters, newspaper mats, leaflets, streamers, stuffers, "cash savings" deals . . . everything you need to build volume!

Specifide's STERILATE

The last word in an easy-to-use, quick-killing disinfectant.

Packed in a handy 6-oz. pressurized can, Specifide's STERILATE belongs in every dairy barn and hog house on every farm.

To help prevent infection in castrating, de-horning, vaccination sites, cuts and all open wounds, sell

STERILATE

Jobber inquiries invited.

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through the floor in tests conducted by the company. The product is not affected by acids, alkalis, grease or oils. It also acts as a curing agent, the company says, and "dusting" is eliminated and formation of alkaline salt deposits on the surface of the concrete is prevented. For details, check No. 7629 on the coupon and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7573—Linear programming, International Business Machines Corp.

No. 7574—Temperature recording unit, Hot Spot Detector, Inc.

No. 7575—Automatic bag feeder, Bemis Bro. Bag Co.

No. 7576—"Roughager" pellet mill, California Pellet Mill Co.

No. 7577—Bulk fumigant, Ferguson Fumigants, Inc.

No. 7578—Extractor magnet, Magni-Power Co.

No. 7579—Proportioning pump, B-I-F Industries, Inc.

No. 7580—Booklet on pellet mills, Sprout, Waldron & Co., Inc.

No. 7581 — Automatic unloader, Butler Manufacturing Co.

No. 7582 — Molasses feed scale, Richardson Scale Co.

No. 7583—Bin vibrator, Eriez Manufacturing Co.

No. 7584 — Dealer program brochure, William Davies Co., Inc.

No. 7586—Engineering service, V. D. Anderson Co.

No. 7590—Bulk or feed body, Trailco Manufacturing & Sales Co.

No. 7587—Inert atmosphere generators, Gas Atmospheres, Inc.

No. 7588—Molasses product, Vy-Lactos Laboratories, Inc.

No. 7589—Bulk feed body, Gerber Sheet Metal, Inc.

No. 7591—Sales booklet, Perrygraf Corp.

No. 7592—Package Pneumatic system, Sprout, Waldron & Co., Inc.

No. 7593—Bag flattener, New London Engineering Co.

No. 7594—Vitamin K product, Abbott Laboratories

No. 7595—Portable grain conveyor, Myers-Sherman Co.

No. 7596—Feed, fertilizer body, Simonsen Manufacturing Co.

No. 7597—Tractor shovel, The Frank G. Hough Co.

No. 7598—All-steel hog pen, Starline, Inc.

No. 7599—Vitamin K product, Heterochemical Corp.

No. 7600—Fish meal dryer bulletin, Standard Steel Corp.

No. 7601—Dust collector, Ripco Air Systems.

No. 7602—Bulk fumigant applicator, Ferguson Fumigants, Inc.

No. 7603—Feed Fat Bulletin, Procter & Gamble Distributing Co.

No. 7604—Shovel-barrow, Gar-Bro Manufacturing Co.

No. 7605—Fall pack promotion, Chas. Pfizer & Co., Inc.

No. 7606—Booklet on coccidiosis, Dorn & Mitchell Laboratories, Inc.

No. 7607—Air vibrator bulletin, The National Air Vibrator Co.

No. 7608—Bagging scale, Richardson Scale Co.

No. 7609—Temperature systems, Hot Spot Detector, Inc.

No. 7610—Half-round aeration, Rolfes Grain Aeration Companies.

No. 7611—Materials handling unit, Conveyors & Dumpers, Inc.

No. 7612—New size package, Abbott Laboratories.

No. 7613—Checkweigher literature, Toledo Scale.

No. 7614—Bulk storage tank, Leach Manufacturing Co.

No. 7615—Auto leasing study, Foundation for Management Research.

No. 7616—Push button hog feeder, Parker Feeders, Inc.

No. 7617—Large grain bin, Martin Steel Corp.

No. 7618—New catalog, Burrows Equipment Co.

No. 7619—Bulletin on stream splitters, Sprout, Waldron & Co., Inc.

No. 7620—Hard-grains roller mill, Ross Machine & Mill Supply Inc.

No. 7621—Fresh egg merchandiser, Tobias Enterprises.

Only *Ultra-Life* takes that vital *extra step** HELPING YOU TO *build and sell** BETTER FEEDS

When you build top-quality feeds with exclusive Ultra-Life vitamin and trace-mineral formulations, the Ultra-Life Program just begins to work for you.

That EXTRA STEP... resulting in increased sales and profits for you... follows fast. Ultra-Life's big marketing staff... nutritional advisors, farm-service men, and merchandising experts... goes to work promoting YOUR NAME BRAND feeds... through livestock and poultry nutritional schools, feeding programs, feeder contacts and a complete advertising campaign consisting of — YOUR NAME BRAND folders, feeding and management books, tags, registrations, and your own 16-page monthly Poultry and Livestock Journal.

May we be of service to you?

Ultra-Life at work —

TESTING: In laboratory and field, constantly exploring new nutritional theories.

PERFECTING: Development of more productive, lower-cost rations and feeding programs.

TRAINING: Of feed manufacturers' employees in livestock and poultry feeding programs, on-the-farm service, and sales techniques.

SELLING: Advertising aids in many forms, proven sales programs, feeding programs, meetings, etc., to help you sell more feed.

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Write for free copy of "YOU and ULTRA-LIFE" for full details of the Ultra-Life Program.

Wirthmore Picks Dairy Service Representative

WALTHAM, MASS.—Carl E. Abrahamson, director of dairy sales, Wirthmore Feeds, Inc., Waltham, has announced the appointment of Charles E. Dinsmore, Newtown, Conn., as dairy service representative in central Massachusetts.

Mr. Dinsmore, a graduate of Stockbridge School of Agriculture, managed a large dairy farm for three years prior to accepting his new position with Wirthmore Feeds.

In Canada it's...

N. D. HOGG, LTD.

Feed Ingredient Merchants

P. O. Box 66, Station Q

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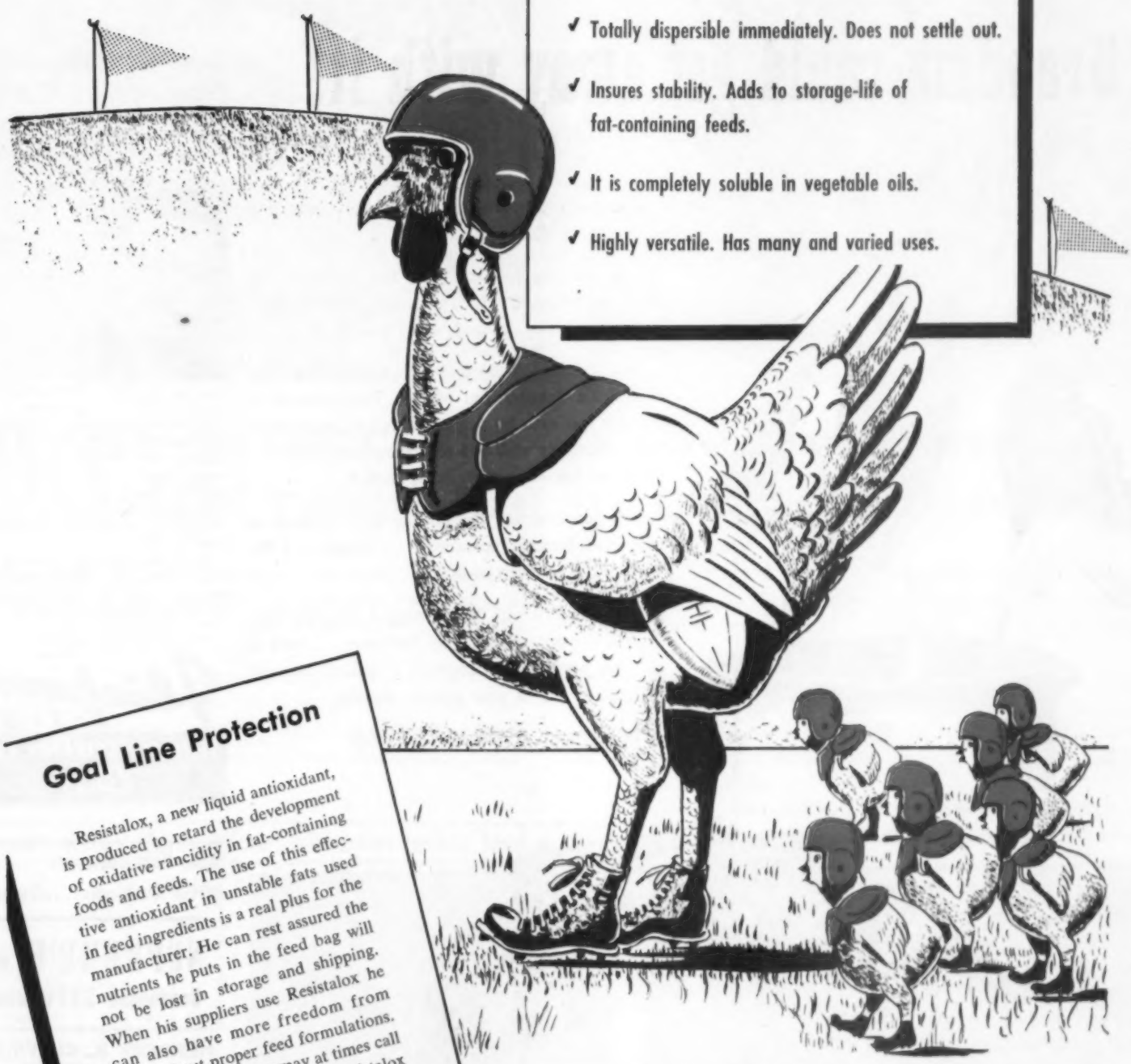
America's Fastest-Growing Farmaceutical House

Resistalox___a better way to protect your bird's health



Score these points for RESISTALOX ANTIOXIDANT when used in fat-containing feeds

- ✓ Fights oxidative deterioration and rancidity.
- ✓ Totally dispersible immediately. Does not settle out.
- ✓ Insures stability. Adds to storage-life of fat-containing feeds.
- ✓ It is completely soluble in vegetable oils.
- ✓ Highly versatile. Has many and varied uses.

Goal Line Protection

Resistalox, a new liquid antioxidant, is produced to retard the development of oxidative rancidity in fat-containing foods and feeds. The use of this effective antioxidant in unstable fats used in feed ingredients is a real plus for the manufacturer. He can rest assured the nutrients he puts in the feed bag will not be lost in storage and shipping. When his suppliers use Resistalox he can also have more freedom from worry about proper feed formulations. The use of Resistalox may at times call for specific data. Call on us. Resistalox is shipped in 15-gallon lined steel drums. Write Resistalox Sales Dept., P. O. Box 5998. Clip the coupon to save time.

CLIP OUT

Firm Name_____

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Please send me information on Resistalox Antioxidant.

CASCO CHEMICAL CORPORATION

P. O. BOX 5998 • DALLAS, TEXAS

BIG BABE Pre-starter Milk Replacer

15% FAT

28% PROTEIN

ASSOCIATED FEED PRODUCTS, INC.
1220 FLOUR EXCHANGE BUILDING
MINNEAPOLIS 15, MINN.

FEEDSTUFFS—*LEADER in its field*

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Light Requirements For Hens Studied

STORRS, CONN.—Current recommendations of 14-hour light for laying hens may not be getting maximum production from the birds, says Frank A. Ryan, associate professor of poultry science at the Storrs Agricultural Experiment Station, University of Connecticut.

All night lighting of birds increased average lay per hen 4.4 eggs during the year-long Storrs egg laying test.

To learn the merits of 14 hours vs. all night lighting, each pen of 26 hens was divided in half with 13 hens getting 14-hour light and 13 hens all night light.

Most significant result was the fact that slightly more than three fourths of the production increase came during the first 12 weeks. During this time each hen averaged 3.8 more eggs than did her sisters on 14-hour light daily.

After the first 12 weeks, production under the two systems became more or less equal.

Mr. Ryan thinks that this and similar studies could lead to the recommendation of different procedures during the early and late stages of the laying season.

"TWO-PRICE" BROILER SYSTEM USED

MACON, GA.—The housewives of this area were given the full "two-price" broiler system by Colonial Stores when broilers sold for 19¢ a pound with purchases of other meat.

With a limit of three broilers, a customer was required to buy $1.99 worth of meat to get the low price—otherwise, the broilers sold for 38¢ a pound.

Local store officials declined to discuss the volume of broilers sold at the "bargain" price.

Grandma could get away with it!

Grandma's recipes were a pinch of this and a dibby-dab of that.

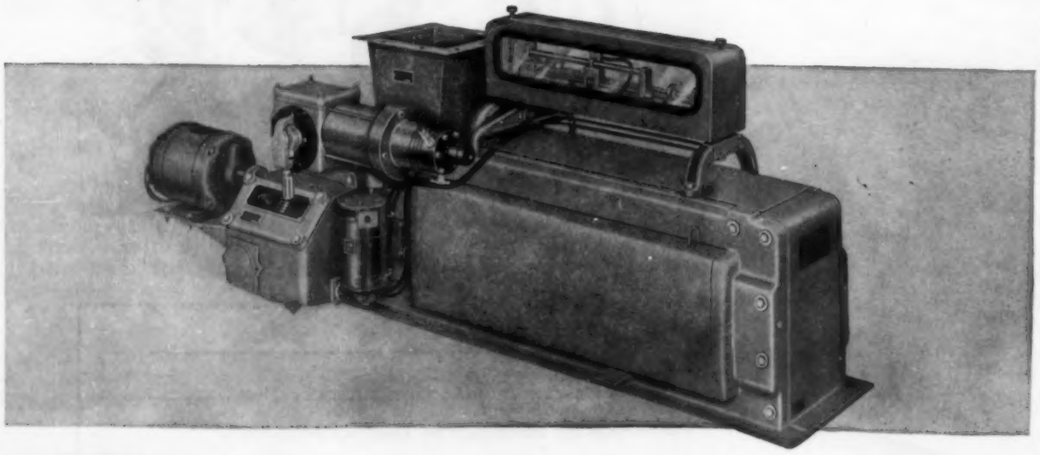
That was fine for Grandma. But it won't work in process blending. Here, you need precise control, minute-to-minute accuracy, exact formulations.

And you get just this and more with W&T's Merchen Scale Feeders and Meters. They control or measure feed rates by weight. There's no guess work. You get exactly what you set the equipment for . . . yields are known; quality is controlled.

You can feed any free-flowing solid in batch or continuous blending operations . . . as little as 3 lbs. per minute; as much as 3000.

And you do it with W&T's rugged, compact Merchen equipment—built for performance . . . built to give you profit-making control . . . built to take the "Grandma" out of your process blending.

Interested? Write Dept. M-48.36



WALLACE & TIERNAN INCORPORATED
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Jesse H. Hallowell Promoted by U.S.I.

NEW YORK—Jesse H. Hallowell has been named Boston sales division manager for U.S. Industrial Chemicals Co., division of National Distillers and Chemical Corp., New York.

Jesse H. Hallowell

The announcement was made by Alden R. Ludlow, Jr., vice president in charge of sales. Mr. Hallowell replaces Edward C. Richardson, who will become U.S.I. manager of Chicago sales.

Mr. Hallowell was working as a salesman at the company's Chicago office at the time of his new appointment. Prior to this he had been located at the U.S.I. Tuscola, Ill., technical service laboratory where he started his employment with the company in 1953.

He graduated from Eastern Illinois State College in 1950, and was a high school science teacher at Durand, Ill., before he started working for U.S.I.

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Nothing protects turkeys during the critical growing-finishing period like nf-180. It prevents and controls more turkey diseases than any other drug. The comparison chart below proves it.

With nf-180 you can tailor medicated feeds to fit your needs. Here are three methods in widespread use:

Two-pound level (.011% furazolidone) — fed continuously to help protect against blackhead, hexamitiasis, and other diseases.

One-pound level (.0055% furazolidone) — fed continuously for wide protection against stress-caused troubles and many diseases, except where blackhead and hexamitiasis are problems.

Week-a-month plan — for areas where disease is not as serious. You feed nf-180 at a 2-lb. (.011% furazolidone) level one week a month to help clean up birds, fight stresses, and knock out disease organisms before they cause trouble.

Compare nf-180 (furazolidone) with other turkey feed medications

DRUG	Growth Stimulation	Typhoid	Pullorum	Paracolon	Paratyphoid	C. R. D. Sinusitis	Blue Comb	Hexamitiasis	Synovitis	Ulcerative Enteritis	Blackhead	Stress periods
*nf-180 (furazolidone)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Chlortetracycline	YES	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO	YES
Oxytetracycline	YES	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO	YES
Bacitracin	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES
Penicillin and Streptomycin	YES	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO
Penicillin	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO
12½ Penicillin plus 37½ Bacitracin	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES
Erythromycin Stearate	NO	NO	NO	NO	NO	P-? T-YES	P-? T-YES	NO	P-? T-YES	NO	NO	NO
2—Acetylamino 5—Nitrothiazole	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
4—Nitrophenyl. Arsonic Acid	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-NO	NO
A Sulfa—Tin—Arsenical Comb.	YES	P-? T-NO	P-? T-NO	NO	NO	NO	P-YES T-NO	P-YES T-NO	NO	NO	NO	NO

KEY — P: Prevention T: Treatment *Each pound of nf-180 contains 50 grams of furazolidone

In addition, all three plans help improve feed conversion, step-up growth, and eliminate sub-clinical infections. Buildup of resistant organisms has never been a problem with nf-180—no unwanted side effects because nf-180 is non-toxic.

Why settle for less than nf-180 protection? Review your turkey disease problems, then set up the nf-180 program which will fit your needs. For complete details on nf-180, talk with your Hess & Clark representative, or write, wire, or call for the Turkey Feed Medication Kit to Feed Products Manager, Hess & Clark, Ashland, Ohio.

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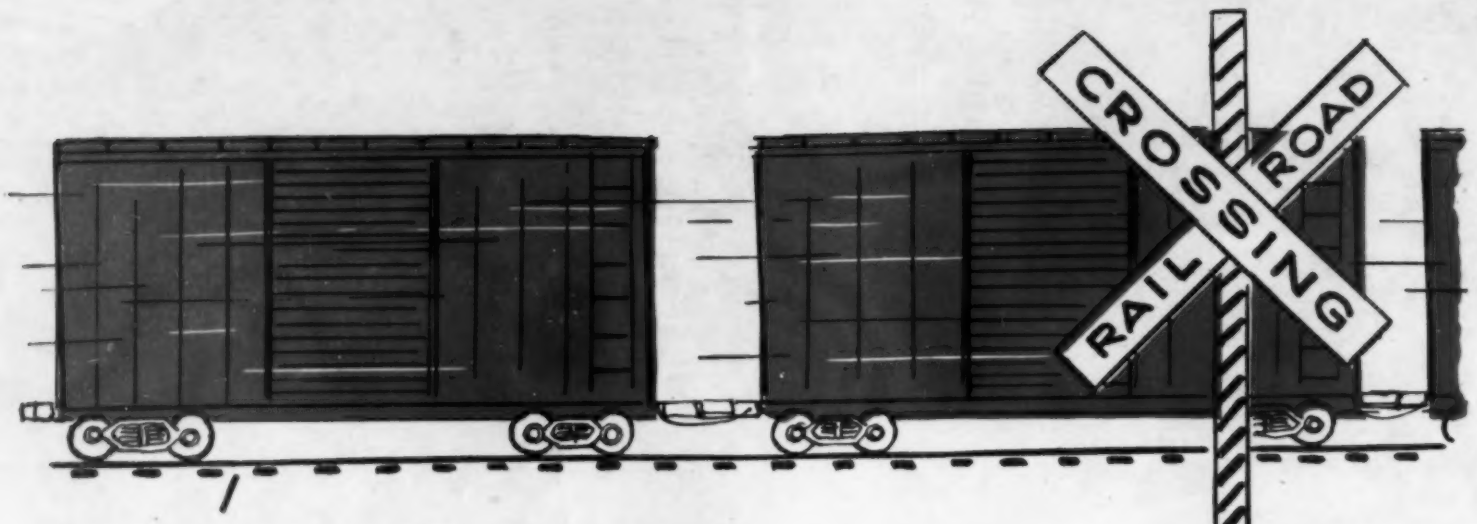

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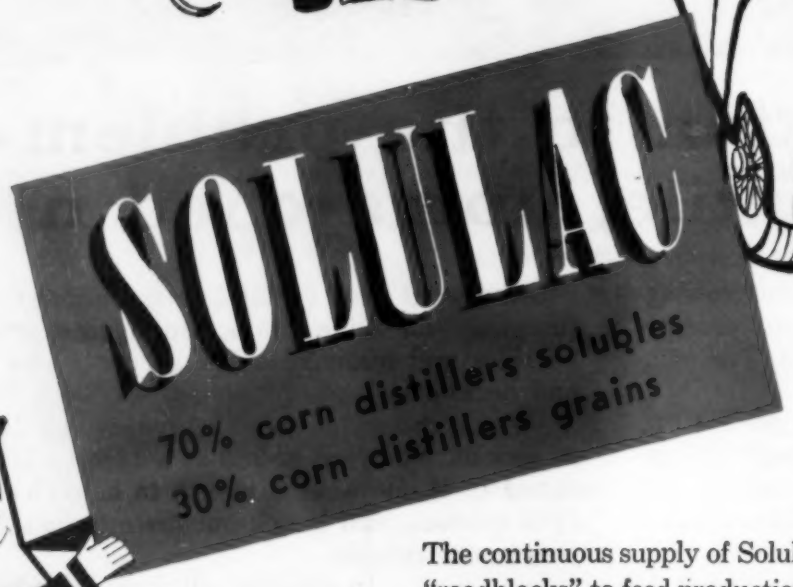

The continuous supply of Solulac means the end of one cause of sudden "roadblocks" to feed production! Solulac is made and is available every week of the year. So, you can formulate your feeds with it and be sure of continuous supply — of unvarying quality. You can get the high nutritional values of Solulac, its GFF (Grain Fermentation Factors — unidentified growth factors found exclusively in Distillers Feeds) and vitamins. Guaranteed to be free flowing in 50 and 100-pound bags or bulk carloads. Just write, wire or phone. And remember, Grain Processing Corporation is also a continuous source of corn distillers dried grains, too!

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INGREDIENT

(Continued from page 24)

grade fish, fish by-product or foreign material.

Dr. C. R. Grau, University of California, has recently reported on the biological availability of amino acids in feedstuffs (9). He uses charts to present his data on the growth rates for chicks in a lysine bio-assay for four different fish meals. He also plots the content of amino acids in these fish meals—both as to total and available. One fish meal was purposely overheated. Growth rates varied from 0 to 6.6% for the fish meals used in this comparison. The overheated meal, of course, was at 0, with its arginine completely unavailable, and the lysine about 20% available. Besides fish meal, Grau also includes in his report some work he has done on soybean oil meal, sesame seed oil meal, cottonseed meal and meat-and-bone meal. I am sure you will find it very much worth your while to study this report carefully.

FISH SOLUBLES

The feed industry has, in general, considerable faith in liquid solubles from commonly processed fish as a source of one or more unidentified factor(s) for growth and reproduction in rations for poultry and swine. Fish solubles are available as: (1) a condensed or liquid product, (2) a product made by drying liquid fish solubles on some carrier, such as soybean oil meal, millfeed and the like, and (3) there is one and possibly more products claimed to be pure dried solubles plus dried fish liver and glandular meal. Liquid fish solubles analyze about 50% solids and usually some 32% protein. Blended products of fish solubles on a carrier have varying analyses according to the concentration of the solubles and the carrier used. As a rule, fish solubles are not counted on much as a concentrated source of high quality fish protein. Then, too, fish solubles have been criticized at times for lack of uniformity in content of growth and reproduction factors because of processing variables. Actually, there isn't much scientific data to show whether or not the desirable factors in fish solubles are stable or unstable to such processing variables as heat, acids, alkalies and the pH of the liquid or dried product.

Nevertheless, many of us believe that there is a considerable variation between different kinds and batches of fish solubles in content of the desired unidentified growth and hatchability factor(s). The reasons for these variances are not clear at this time.

PARTICLE SIZE

Grinding versus chopping of hay and roughage: Rather extensive experiments conducted with dairy cows have shown that grinding good roughage is not usually profitable and that such materials when finely ground may actually be detrimental to cows. It seems that when hay is ground very fine it does not stay long in the rumen but goes on unchanged into the true stomach. The stomach has no facilities for softening the hay so it continues on into the intestinal tract causing considerable irritation of the intestinal mucosa. Actually, in these experiments, normal feeding of good bulky hay resulted in the production of 7.5 to 11% more butterfat than when the cows were fed finely ground hay. The average differences in butterfat tests amounted to 0.32% in favor of normal feeding, that is, feeding good quality, rather coarse or bulky hay.

Fine versus coarse grinding of grains: The fineness of grinding the grains and the grain concentrate portion of the ration is also worth considerable thought. Experiments at a northwest state agricultural experiment station showed that the fineness of grind of the grain did not affect the weight of the cows nor the digestibility of the ration, but that coarsely ground grain was more palatable than finely ground grain. Cows fed coarse grain produced 14.65 lb. more milk and 0.12 lb. more fat during the experimental period than those receiving grain that was finely ground. A somewhat smaller amount of ground grain was required to produce 100 lb. of milk than was the case with the fine ground grain. These differences in grain and roughage have been demonstrated mostly with dairy cows.

PELLETING GRASSES AND LEGUMES

According to the results of most of the tests that have been reported (7), pelleting of roughage may be ex-

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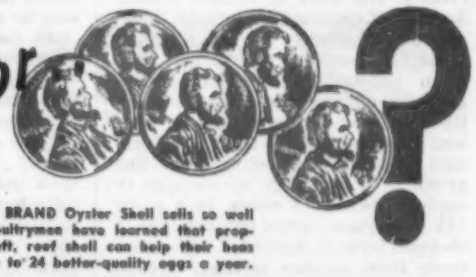
2 dozen eggs for  ?

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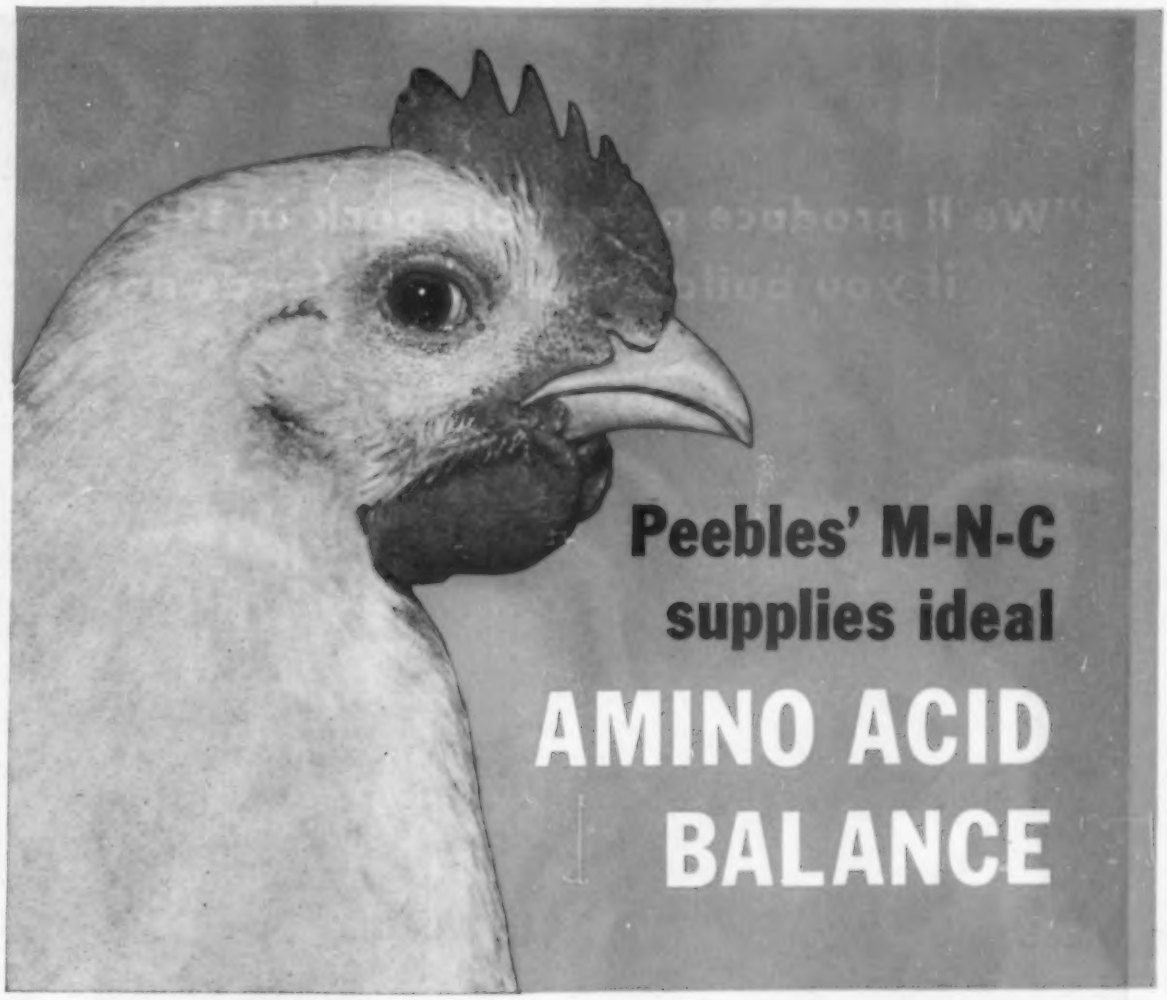

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32 PLANTS *Coast to Coast*

pected to give increased rate and economy of gain in high-roughage-type rations. The work at Illinois (Dixon Springs Experiment Station) illustrated differences in the nutritive value of various roughages, even when pelleted. Alfalfa hay pellets gave faster and more efficient gain than timothy-alfalfa pellets or Sericea Lespedeza hay pellets. What was said above about the objection to fine grinding of roughage seems also to apply to pellets or cubes. In a study (4) with sheep, grass hay was fed in chopped form as compared with cubes made from medium to finely ground hay and from very finely ground hay. The hay in the long or chopped form excelled in digestibility of dry matter, crude fiber, crude protein, cellulose and nitrogen free extract. Cubed medium ground hay was next and the fine ground hay in cube form was decidedly inferior.

Table 7 gives the results of the grind of alfalfa on the performance of lambs fed pelleted feeds. There were two grinds of alfalfa used in this Colorado test—one was ¼-in. and the other was 1/16-in. You will notice that the ¼-in. grind of alfalfa was far superior to the 1/16-in. grind.

At the present time there is considerable interest in the compressing of hay into a wafered or pelleted form as opposed to the baling of hay, such as is commonly done on many farms. Table 8 gives the results of a test conducted at the Oregon State College with baled, wafered and pelleted alfalfa hay fed to dairy cows. There is no apparent difference between the three physical forms of hay with regard to feed consumption, actual or 4% fat corrected milk production, or body weight of the cows. However, the feeding of pelleted hay (ground through a 5/16-in. screen) resulted in a statistically significant reduction in butterfat production, as compared with either baled or wafered hay. There was no difference in milk or butterfat production between the cows fed either baled or wafered hay.

I think you will be interested in reading an article which appeared on page 8 of Feedstuffs, Vol. 30, No. 29, for July 19, 1958. It describes a portable model of a machine called a "Foragizer," designed by a west coast firm for the production of roughage wafers, which the appointed sales distributing agency calls "Hayfers." There is a more recent article on this subject, entitled, "New Oregon Plant Makes Both Pelleted and Wafered Forage Products for Cattle and Sheep," Feedstuffs, Vol. 31, No. 15, pp. 18-20, April 11, 1959.

TABLE 7. Effect of Fineness of Grind of Alfalfa on Performance of Lambs Fed Pelleted Feeds

	Grind of Alfalfa*	
	1/16"	1/4"
Av. initial wt. lb.	70.0	68.7
Av. final wt. lb.	89.5	91.3
Av. daily gain, lb.	0.433	0.502
Feed per cwt. gain, lb.	759.0	756.0

*Pelleted rations consisted of 50% corn, 50% alfalfa, plus 2 lb. trace minerals and 10 lb. limestone per ton.

Ref.: General Series Paper 671, Colorado Agricultural Experiment Station, Feb. 27, 1958, p. 17.

Table 8. Effects of Feeding Baled, Wafered or Pelleted Alfalfa Hay to Dairy Cows

	—Form of Alfalfa Hay—		
	Baled	Wafered	Pelleted
Feed consumed, lb. .	797.2	833.2	811.8
Body Weight, lb. ...	1195.6	1212.9	1190.6
Butterfat, %	4.13	4.15	4.0
Total milk produced, lb.	899.74	887.06	903.93
4% FCM, lb.	848.83	857.14	853.24

*Ref.: Oregon State College Reprint, May, 1958.

SUMMARY

From the data presented, it may readily be seen that processing procedures can exert very definite effects, both beneficial and detrimental, on ingredients that are intended to be used in the manufacture of feeds for livestock and poultry. Regardless of the quality or nutritive value of an ingredient in its raw or native state, proper or improper processing can alter these characteristics, either to improve or cause deterioration.

It has been shown that heat, when used at optimum levels in conjunction with properly controlled moisture, time intervals and other processing variables, may have a beneficial effect on the nutritive value of various protein meals. On the other hand, the improper use of heat during processing can result in a definite deterioration of the protein quality of many of these meals. In addition, improper use of heat can destroy the vitamins, unidentified growth and reproductive factors and other desirable nutrients in feed ingredients.

We have also seen that granulation (particle size) of one or more of the ingredients in a feed mixture for ruminants can exert a definite effect on the animal and its production. This effect may result from an alteration in palatability of the mixture or result from any influence (mostly physical in nature) that an ingredient or feed mixture has on digestibility (especially rumen function) within the animal's body. Both beneficial and adverse effects have been observed from feeding certain ingredients and feed mixtures in pelleted or compressed form.

As the world population increases, resulting in a greater demand for meat, milk, eggs, wool and other items produced only by livestock and poultry, processing research will be called upon more and more to produce ingredients with a minimum of impairment in their nutritive value. A look into the future reveals a definite need for marked improvement in the efficiency of production, if we are to meet this increasing demand for these products. Any deficiency in the nutritive value of the ingredients used in the feeding of our poultry and livestock serves only to reduce efficiency of production. In addition, those ingredients which can be used directly for human food must be processed in such a way as to improve both their acceptability and nutritional value.

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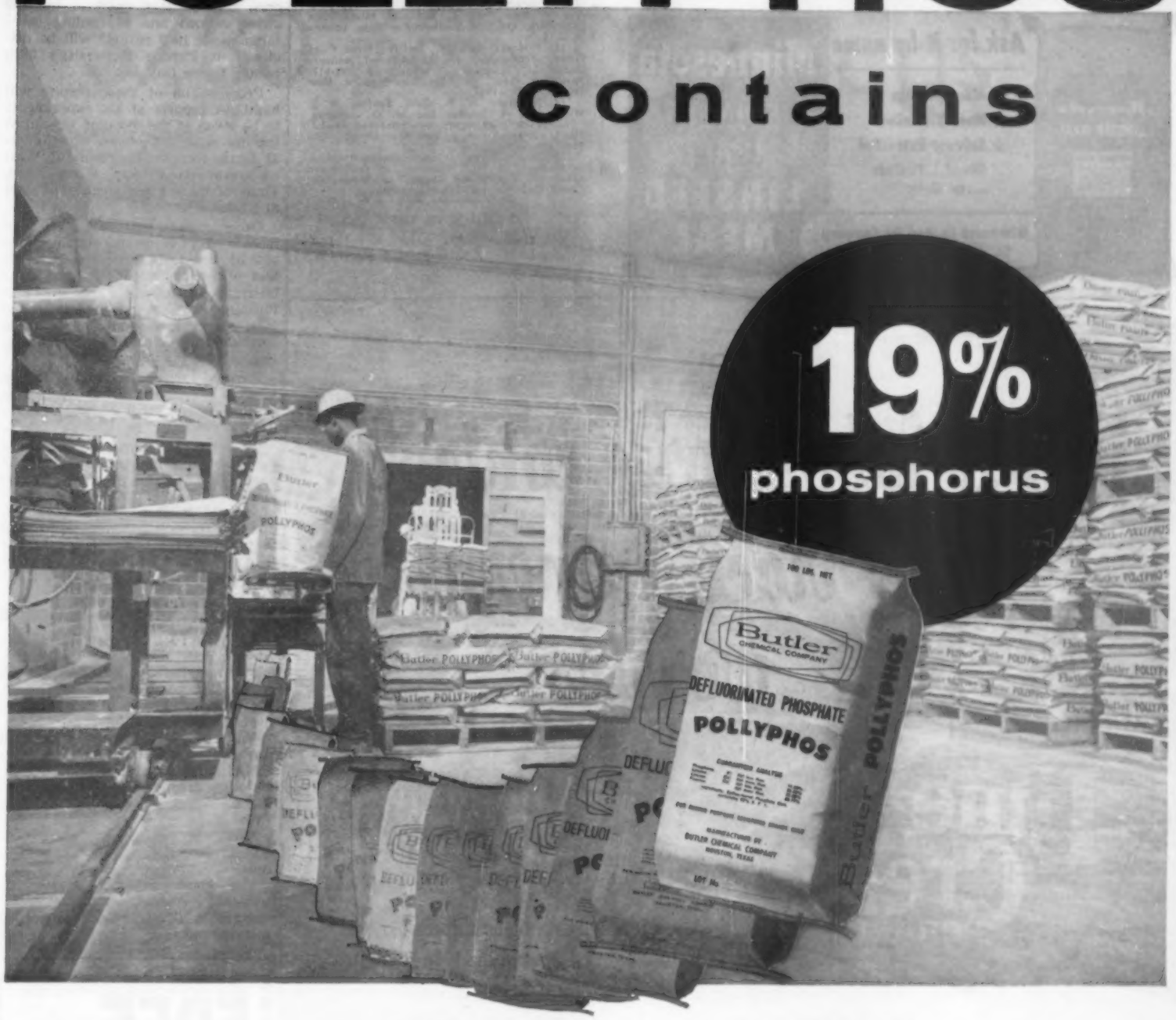

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FEED MAN DIES

VISALIA, CAL.—Joe D. Finni, owner of the Visalia Fuel & Feed Co., Visalia, died recently.

Nutrition Research To Be Presented at Purdue Swine Day

LAFAYETTE, IND.—Experimental results of proper supplementation of corn with soybean oil meal (a 1959 swine ration) and of feeding corn-tankage (a 1909 ration) will be disclosed at Purdue University's 39th annual Swine Day Aug. 28.

Presentation of these results will highlight reports of six experiments to be given at the morning session at the university's livestock experimental farm, three miles north of West Lafayette on County Farm Road. Tours of these experiments will start at 8 a.m. (CDT).

Other experiments to be reported include effect of enzyme supplementation of corn-soybean meal rations; effect of various antibiotics and combinations of antibiotics for growing-finishing swine; response of swine fed high energy diets and cooled with a sprinkler, and effect of pelleted gestation rations for sows and gilts.

Early visitors will also have time to view the Indiana Swine Evaluation Station, swine breeding unit and purebred swine unit.

The afternoon program, starting at 1, will be held in the Hall of Music on the Purdue campus. Prof. Claude Harper, head of Purdue's department of animal science, will be chairman of the afternoon program, which will feature talks by authorities in the field of swine production.

Cargill Adds to Storage

SAVAGE, MINN.—A one million bushel steel storage bin is nearing completion here at the Port Cargill soybean processing plant of Cargill, Inc., nationwide agricultural products firm.

Fred M. Seed, vice president of Cargill's vegetable oil division, says the circular single-bin tank will be 160 ft. in diameter, 48 ft. high around the sides and will slope upward to a 78 ft. high center peak. Conveyors will connect into the present 185,000 bu. elevator and to processing facilities.

The plant, adjacent to Cargill's terminal elevator here, is one of the company's 10 vegetable oil processing installations, according to Mr. Seed.

All Lime Crest trace-mineral pre-mixes, both standard and custom made, are under rigid laboratory control. That control begins with the ingredients and doesn't end until the final product has been checked.

Because of Lime Crest's complete laboratory control (both chemical and spectrographic methods are used) the feed manufacturer who uses Lime Crest trace-mineral pre-mixes need not worry that his feeds contain too little or too much of the trace minerals his nutritionist has specified.

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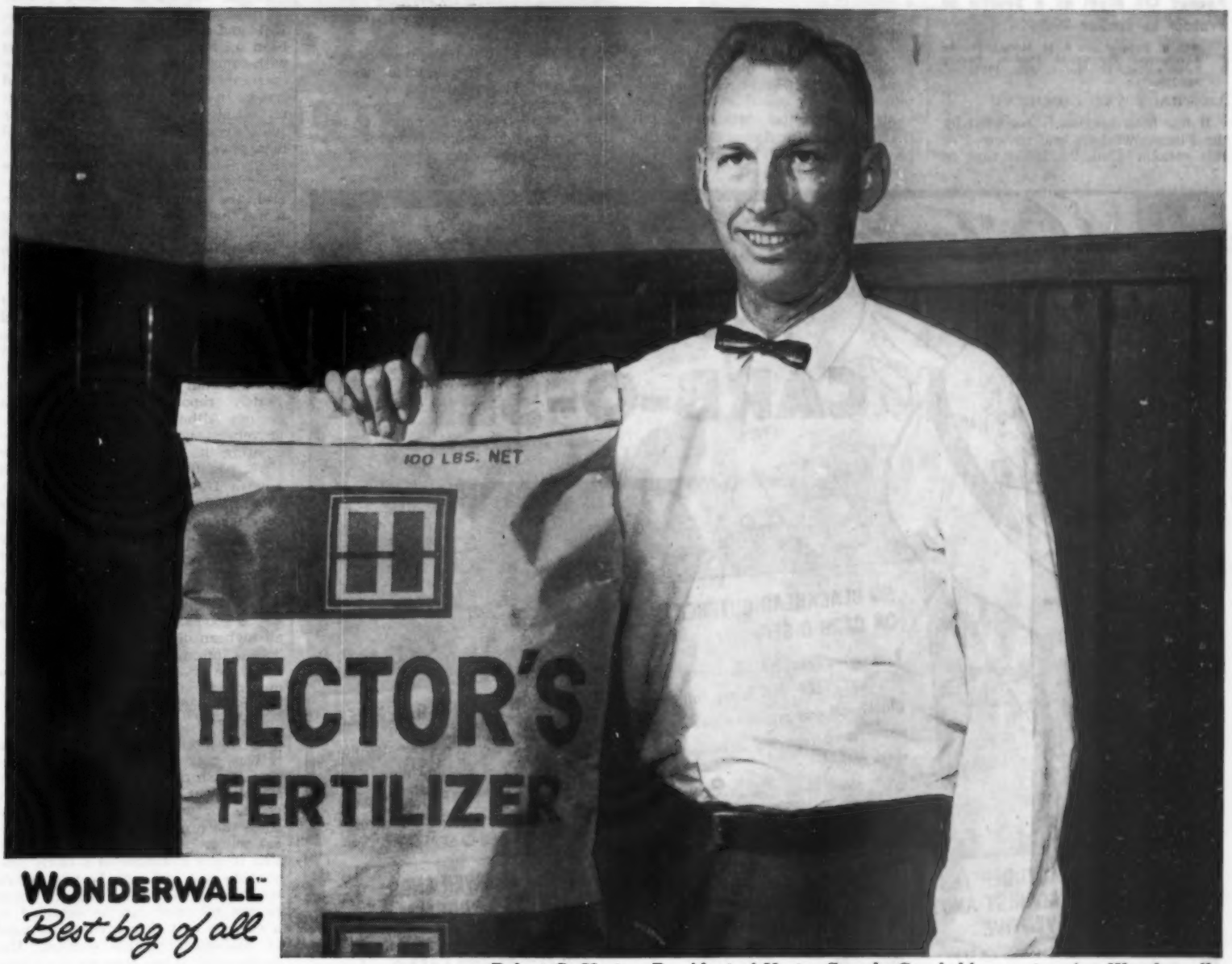

Robert C. Hector, President of Hector Supply Co., holds a cost-saving Wonderwall.

Hector Supply Company of Miami, Fla., operating four plants, produces and distributes fertilizers, feeds, insecticides and plant foods.

President Robert C. Hector found that West Virginia's WONDERWALL measurably reduced his company's bag costs, yet gives better service.

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Peanut Oil Meal as a Source of Protein in Broiler Diets

•C. R. Douglas and R. H. Harms, Florida Agricultural Experiment Station, Poultry Science, Vol. 38, No. 4, July, 1959, pp. 786-790.

ABSTRACT AND COMMENT

It has been previously reported by the Florida workers and reviewed in this column (Jan. 24, 1959) that in a series of six feeding trials comparable results were obtained when one half of the soybean oil meal was replaced with an equal weight of 55% protein peanut oil meal in broiler diets. Since neither energy nor protein were kept constant in the previous experimental diets it was felt that a more critical evaluation of the protein quality in peanut oil meal would be obtained by keeping protein and energy constant in such experimental diets.

Therefore, three eight-week battery trials were conducted using a total of 1483 Vantress X White Plymouth Rock broiler type chicks to evaluate the performance of peanut oil meal as a replacement for soybean oil meal when protein and energy were kept constant in the experimental diets.

In the first trial, a 55% protein peanut oil meal was used, while in the second and third experiments a 50% protein oil meal was used. It should be pointed out that the peanut oil meals used were solvent extracted, and it was assumed that the 50% peanut oil meal had energy content equal to that of 50% solvent soybean oil meal. (This in itself is a fallacious bit of reasoning in my opinion, since all available evidence indicates that the 50% peanut meal has more energy than 50% soybean oil meal!)

In the various diets used, peanut oil meal was used as 0%, 25%, 50%, 75% and 100% replacement of soybean oil meal in the first two trials with supplementation in certain cases of methionine hydroxyanalogue and lysine. In the third experiment, peanut oil meal was used as 0%, 50% or 100% replacement of soybean oil meal, again with supplementary lysine, methionine hydroxyanalogue and glycine in certain diets. In general, the results showed that when more than 25% of the soybean oil meal was replaced by peanut oil meal, growth and feed conversion were adversely affected, although not significantly in many instances.

When 75% or 100% replacement levels were used, the results differed significantly. Supplementation of the diets with lysine appeared to correct the first limiting amino acid deficiency of peanut oil meal diets—as previously reported by the Florida group. Although a significant improvement was obtained by supplementing the diets containing 50% or 100% peanut oil meal in experiment 3 with L-lysine, MHA and glycine, it was impossible to assess from the experiment whether or not this effect was due solely to lysine or to the combination of amino acids used. The growth rate produced by the mixture of amino acids in the presence of 50% or 100% peanut oil meal was not as good as that obtained from the all-soybean oil meal diet.

It is interesting to note that, probably due to less critical growth requirements, the females in this experiment were more tolerant to higher levels of peanut oil meal.

In the previous work from Florida it was suggested that the combination of fish meal with condensed fish solubles was a particularly fortunate choice for use with peanut oil meal since the product was a good practical source of lysine. Commercial lysine is now available at a fairly reasonable cost and may be worthwhile considering in certain rations where peanut oil meal can be obtained at a cheaper cost than soybean oil meal of equivalent protein content. Unfortunately, it has been my somewhat frustrating experience that, although the price of peanut meal may be very attractive momentarily, it seems to bound around much more than soybean meal!

◆

Timely and Worth Noting

A report is made in the current Poultry Science (July, 1959) which should be very interesting to all feed men. Summers, Pepper and Slinger (pp. 816-825) report on an experiment in which an effort was made to determine the "unidentified factor activity" of three market samples of fish meal and meat meal, and one sample of condensed fish solubles in diets containing either 2.5% whey or 2.5% dried buttermilk as a source of the "whey factor" activity.

The one sample of fish solubles gave a fairly consistent growth response in the practical type chick

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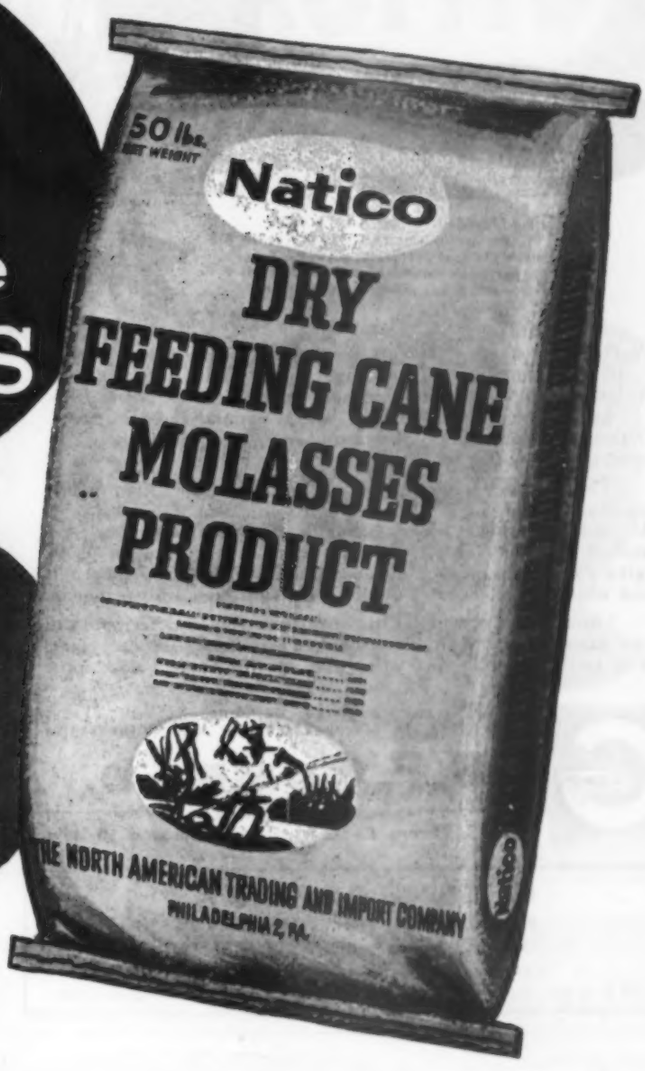

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diets used. However, **none** of the samples of meat meal or fish meal used in these tests promoted any "unidentified growth factor" response! This is a very disconcerting result for those of us who may have been relying on fish and meat meals as sources of the "unidentified factors."

The authors of the paper also point out that although a review of the literature suggests that fish meal and meat meal are sources of unidentified factor activity, many of the experiments have been conducted without due regard to protein and/or energy levels when these materials have been included in the diets. They postulate that, at least in certain cases, the unidentified factor activity may have been due to the slight increases in protein and/or energy or other known nutrients resulting from meat or fish meal inclusions in the rations. They also point out that since the sample of fish solubles gave a fairly consistent response in these trials, the diets were actually deficient in the so-called "fish factor."

This work merely points out that most of us are wise in including as many sources of "unidentified factor" activity in critical diets, such as chick and broiler rations, as we can afford—in spite of the current view held by some authorities that such growth factor response may be largely explained by an imbalance of amino acids (Gordon and Maddy, 1957-58).

Highway Equipment Appoints Distributors

CEDAR RAPIDS, IOWA—Six new distributors have been named for Highway Equipment Co., Cedar Rapids. The following firms will handle New Leader lime spreaders, combination lime and fertilizer spreaders, widespread lime and fertilizer spreaders and mobile blenders:

Heisler's Inc., Willard, Ohio; Equipment Service, Inc., Hartford, Conn.; Burg & Brown Implement Sales, Richmond, Ind.; Flasco Body & Equipment Co., Sioux Falls, S.D.; Leader Equipment Co., Spokane, Wash., and Perfection Equipment Co., Inc., Oklahoma City, Okla.

Kinsley Approves Mill

KINSLEY, KANSAS—A new 100 ft. high feed mill expected to cost $200,000 has been approved by the Kinsley Cooperative Exchange. The new mill will increase capacity from 25 tons of pellets a day to 100 tons in eight hours.

Midget Auto Owner: "I want a half-pint of gasoline and a teaspoon of oil, please."

Service Station Attendant: "And shall I cough into the tires, sir?"

◆ ◆ ◆

The youngster climbed into the barber's chair and settled himself. "Well, my little man," said the barber, "how do you want your hair cut today?"

"Like my pop's," the youngster replied, "with a hole on top."

◆ ◆ ◆

British sailor (bragging about his ship). "Oy say! Our flagship is so big the captain uses a car to drive around the deck."

U.S. Gob: "That's nuttin'. Our flagship is so big the cook uses a submarine to go through the stew seeing if the potatoes are done."

◆ ◆ ◆

Wife: "I've got you this bottle of hair tonic, darling."

Husband: "But my hair isn't falling out."

Wife: "I know, but I want you to give it to your typist at the office; her hair is coming out rather badly."

◆ ◆ ◆

Jockey Fegan, who had just won the Kentucky Derby: "I just keep whispering in my horse's ear a little poem I made up. 'Roses are red, violets are blue; horses what lose, are made into glue'."

◆ ◆ ◆

Traveler—"How's the train service here?"

Small Town Native—"Wal, they advertise one train a day, but you and me know them advertisements exaggerate."

◆ ◆ ◆

After a night out with the boys, a husband said to his wife, "I suppose you're mad at me because I have this black eye?"

His wife replied, "Don't kid yourself. You didn't have that black eye when you came home."

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Tim D. Hoelle

Robert Glim

SWINE PRODUCTION SPEAKERS—Two of the speakers at the recent swine production meeting in Stockton, Cal., were Tim D. Hoelle (left), livestock feed manager of the Ralston Purina Co., Palo Alto, Cal., and Robert Glim, senior vocation instructor at Fresno State College.

Swine Feeding Practices, State's Industry Growth Discussed at California Meeting

STOCKTON, CAL. — Several aspects of swine feeding and management were discussed at the recent swine production meeting in Stockton, as well as the potential of the state's swine industry.

(Also see earlier story in Feedstuffs, Aug. 1)

Farmers came from all over the state, and some from as far as Nevada and Idaho, to discuss what has been described as the most undeveloped segment of California's livestock industry. There is plenty of feed available, the 300 men and women were told by two representatives of the feed industry, while two other speakers presented their experiences in hog raising as examples of good feeding practices.

A resolution was passed asking the Agricultural Extension Service of the University of California to appoint a swine coordinator who would handle the dissemination of all information regarding the feeding, handling and marketing of hogs. A second resolution asked the Giannini Foundation of the university to undertake an economic survey of an expanded hog industry, while a third urged cooperation between various agencies to "establish this important addition to the state's economy."

There were optimistic reports regarding possibilities of the state's producing a much larger share of the 6 million hogs it consumes annually. However, George L. Mehren, director of the Giannini Foundation at the University of California, cautioned against too much optimism in summarizing the discussions. He said it would be necessary to determine whether the price differential California packers say they will pay will be enough to make swine production profitable in the state, and also to see whether producers in California can grow hogs cheaply enough to compete with midwestern shipments.

Tim D. Hoelle, livestock feed manager of the Ralston Purina Co., Palo Alto, pointed out that "there is a plentiful supply of both locally produced grains and shipped in grains to expand the production of pork on a large scale on an economical basis."

The experiences of hog raisers in western states, Mr. Hoelle said, have proven that the barley fed animals are equally as good meat producers as the midwest corn fed swine. Also there is less risk of running short of feed in California than in many other sections of the country, he said.

There is room for the small producer who feeds and handles efficiently as well as the large, Mr. Hoelle indicated, as the farmer's profit is

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dependent on the number of hogs produced per sow—not on the number of sows. It takes six pigs to support the sow, and any above that per litter is profit to the farmer. An efficient operation means nine and 10 pigs per litter twice a year per sow.

Feeding Programs

Two examples of good feeding practices were presented by two farmers who have been raising some of the state's 335,000 hogs. F. R. Woodill of the Vina Loma Ranch, Vina, Cal., described a sow ration of 1400 lb. of alfalfa, 350 lb. of yellow corn and 200 lb. of concentrate, 32%, as increasing his average litter from seven to 9.3 pigs, and the average birthweight from between one and two pounds to 2-3 lb. The feed is provided in self-fed pellets.

His feeding practices for sows during the farrowing period consist of diminishing the ration of the animals for the week preceding farrowing, having brought them in from pasture. After farrowing the ration is increased daily for 10 days, and then brought up to full feed at the end of that time.

Pigs are weaned after about one month, and are then kept in growing pens til! they weigh 75 lb., when they are put on full feed and into pasture. In the growing pens they receive pelleted concentrate and ground corn, and all feed is handled by auger or gravity flow, Mr. Woodill explained.

David Swall of the Outside Creek Cattle Co., Tulare, feeds his sows dry feed, and reduces the ration until six weeks before farrowing. Then the animals go on full feed. About 90% of his feed is handled in bulk, Mr. Swall said.

The issue of whether a feeder should buy feed from commercial feed mills, or mix his own was discussed by Robert Glim, senior vocational instructor at Fresno State College. The cost of feed is the most important single problem since 70-80% of the livestockman's total cost is tied up in feeding. But more important than cost per ton is the number of pounds of feed required to raise 1 lb. of meat, he said. Three to one is the best ratio, he indicated, and in considering mixing one's own feed the farmer must ask himself if this ratio is being maintained, even if the cost per ton is lower than buying.

He explained that the hog producer would have to tie up about $30,000 worth of capital to set up his own mill, and demonstrated from his studies that the farmer would be putting out an average of about $55.80 per ton of feed through his own mill.

Commercial Feed Advantages

Buying commercially produced feed gives the farmer the advantage of using formulas which have been scientifically tested by qualified nutritionists in laboratories and research farms. Through volume purchases, the commercial mills can buy advantageously, and thus unit costs are lower. He explained that progressive firms are making use of linear programming through electronic calculating machines, and that facilities for making pellets mean better feed utilization.

A good feed supply is always readily available by telephoning the supplier, and if delivery is not timely there is always another supplier ready to take over. The problems of machinery repair, damage to grain by pests, storage, and ration experimentation are eschewed by the farmer who purchases.

Packers' Views

Packers like to buy hogs weighing between 200 and 220 lb., according to Louis Hageman, general manager of the Luer Packing Co., Los Angeles. He indicated his firm and other western meat packers would be happy to buy from the western producer and

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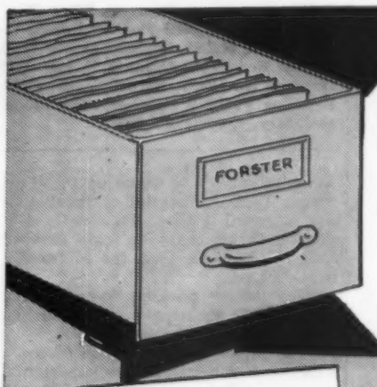

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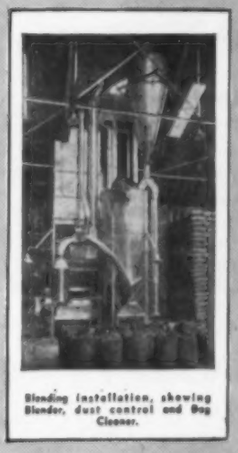
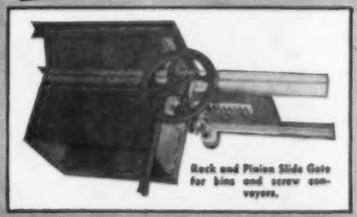

Blending installation, showing Blender, dust control and Bag Cleaner.

Block Buster and Feed Table for Hammermill.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NEW OFFICERS—The new American Poultry & Hatchery Federation officers shown (left to right) are: C. J. McAleavy, executive director, Wisconsin Valley Hatchery, Wausau, Wis.; Ray E. Firestone, second vice president, Troutville (Virginia) Poultry Farm; Vern Steckley, executive director, Steckley Mill & Hatchery, Kendallville, Ind.; Ray E. Parmenter, president, Parmenter Reds, Inc., Franklin, Mass.; L. M. Manford, first vice president, Miller Manford Hatchery, Nixon, Texas; Fred Donsing, secretary-treasurer, Donsing Breeding Farm & Hatchery, Rio Linda, Cal., and Don M. Turnbull, executive secretary, Kansas City, Mo.

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pay him enough to make up for the higher feed differential if the hogs are of equal quality. The feed conversion factor could be more favorable in the West than the Midwest, he indicated.

"The entire packing industry in the West is extremely interested in hog production," he said.

"The scientists and college professors are fast becoming the important people in this new age of hog factories and dry feeding, and nutritionists are able to put together much more productive feed rations than 10-15 years ago."

If feed supply is one of the major considerations in developing a hog industry in California, said Jesse T. Bell, animal husbandry department, Fresno State College, and since feed is readily available, this fact would point up the feasibility of developing the industry.

Other Topics

Discussions during the day long session also centered about such problems as financing the farm, housing, livestock disease and prevention and marketing. Louis Rozzini, president of the California Farm Bureau Federation, presided at the sessions.

Sponsoring organizations included the federation, the California Hay, Grain & Feed Dealers Assn., the Western States Meat Packers Assn., the California Bankers Assn. and the California Veterinary Medical Assn. Assistance was also given by the Agricultural Extension Service and the College of Agriculture of the University of California, by Fresno State College, by the Valley Livestock Marketing Assn., and the California Farm Bureau Marketing Assn.

Soybean Plant Planned

ST. CLOUD, MINN.—Central Minnesota Processors, Inc., has taken an option to purchase 30 acres of land adjoining present company property from the Liberty Granite Co., near St. Cloud. Plans have been set for the construction of a soybean processing plant on the property with the intention of moving all operations to the new site sometime in the future.

The company's next step in the project is to sell stock to cover the estimated $450,000 cost of the soybean plant.

Central Minnesota Processors, Inc., formerly the St. Cloud Canning Assn., is a cooperative organization set up to process agricultural products. Present operations include the processing of sweet corn, peas and string beans.

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Soluble Nutrients, Inc., Names Sales Manager

CHICAGO — Appointment of Thomas S. Owen as general sales manager for Soluble Nutrients, Inc., was announced recently by Dr. F. H. Clickner, president.

T. S. Owen

Prior to accepting his new duties, Mr. Owen was manager of the grain and feed division, Brown Forman Distillers Corp., Louisville. His 22 years of experience in the feed industry include several sales management capacities, including western division manager, Animal Foods Dept., the Borden Co., and general sales manager for Dailey Mills, Olean, N.Y.

He is a graduate of Iowa State University and spent four years in county agricultural agent work prior to associating with the feed industry.

The Soluble Nutrients firm produces Vivo and Mivo, primary fermentation sources of unidentified growth factors.

ANNEX OPERATING

FARNHAMVILLE, IOWA — The new 390,000 bu. concrete annex has been put into operation by the Farmers Cooperative Co. here, according to Urban Knobbe, manager. The complete storage capacity of the elevator is now 1,350,000 bu. The building has 13 silo type bins, 17 x 139 ft., with hoppered bottoms and aeration equipment. The new addition is one of a series in an expansion program.

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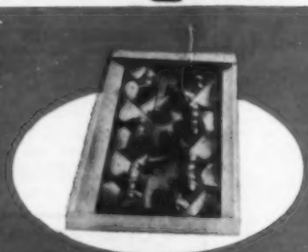

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NUTRITIONIST—AS ASSISTANT IN large feed mill or supervising field programs. Fully capable of handling field duties with salesmen, key feeders and feeder meetings. Graduate midwestern agricultural college. Farm and technical sales experience. Address Ad No. 5111, Feedstuffs, Minneapolis 40, Minn.

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10-Day Debeaking Preferred, Maine Researchers Say

ORONO, MAINE—"When Should Broiler Chicks Be Debeaked?" was the subject of discussion in a recent article by Dr. John E. Berry, assistant poultry scientist, and J. Robert Smyth, head of the poultry science department, University of Maine Agricultural Experiment Station.

Contents of the article about Maine broiler growers and debeaking, as published in the Maine Farm Research quarterly report, follow:

Many Maine broiler growers have shown a preference for debeaking their birds when they are ten days of age rather than when they are one day old. Debeaking day-olds is believed to put too great a stress on the birds. There have been several previous reports on the effectiveness of different methods of debeaking with varying results. Debeaked birds have been shown to have a better feed conversion than non-debeaked birds by work at Georgia, New Hampshire, and Maine. The

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Market Weight and Feed Conversion of Birds Under Various Treatments

Av. weight Feed efficiency

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method of debeaking is therefore of great importance.

The removal of more than one third of the upper beak has resulted in poor growth rate and feed conversion. Georgia workers reported that removal of one third of the lower beak in addition to removing one third of the upper beak resulted in better market weight but poorer feed efficiency. Texas people however found both of these characteristics improved with this type of debeaking. Removal of two thirds of the upper beak and only one third of the lower beak was also successful.

In summarizing previous work it may be said that birds debeaked at one day of age or at ten days had a similar or better feed efficiency than non-debeaked birds. The non-debeaked birds weighed more when marketed but tended to show a poorer carcass grade.

To test the effectiveness of various methods of debeaking at one day and at ten days the following experiment was undertaken. A commercial hatchery supplied 2,400 birds. The birds were divided into six lots of 400 birds each, and each lot was subjected to one of the following treatments.

1. Non-debeaked (controls).
2. One third top beak removed at day old.
3. One third top beak removed and tip of bottom beak seared at one day old.
4. One third each of top and bottom beaks removed at day old.
5. One third top beak removed and tip of bottom beak seared at ten days.
6. One third top beak removed at ten days.

Each group was assigned at random to one of six pens with approximately one square foot of floor space per bird. The birds were fed a commercial ration of mash for the first three weeks and then fed pellets to ten weeks of age. Samplings of the weekly body weights were obtained by weighing 25 males and 25 females randomly selected from each

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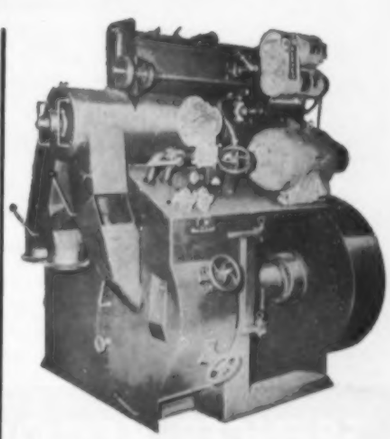

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Market Weight and Feed Conversion of Birds Under Various Treatments

Treatment	No. of birds marketed	Estimated final weight by sex, lb. Males	Females	Av. weight of birds at processing plant, lb.	Feed efficiency (pounds of feed per lb. of weight)
1. Non-debeaked control	382	4.61	3.51	3.93	2.34
2. One third top beak removed at one day	389	4.39	3.54	3.91	2.36
3. One third top beak removed, tip bottom beak seared at one day	388	4.38	3.41	3.84	2.31
4. One third top and bottom beaks removed at one day	382	4.43	3.43	3.85	2.37
5. One third top beak removed, tip bottom beak seared at 10 days	391	4.52	3.43	3.80	2.26
6. One third top beak removed at 10 days	388	4.50	3.37	3.82	2.30

pen. Weekly feed consumption records were also obtained for each group. The over-all feed efficiency, based on the weight of the surviving birds as they arrived at the processing plant, is given in the table.

The debeaked birds weighed less than on-debeaked birds. Birds debeaked at ten days, however, had the best feed conversion. The results of this study indicate that debeaking at ten days of age is to be recommended over debeaking at day-old.

Non-debeaked birds had the greatest mortality, but excessive picking was not noted in the control pen as compared to any other pen. There were no noticeable cases of picking damage to the carcasses recorded by processor's representatives. The differences among the pens as to percentage mortality were not significant, but the birds debeaked at ten days had the least mortality.

The results of this study agree, in general, with the previous studies of other states that debeaking birds results in a lower body weight at marketing, but gives a better feed efficiency. A better feed efficiency is obtained by debeaking broilers when they are ten days old than when they are one day old. Searing the tip of the bottom beak, in addition to removing one third of the upper beak at ten days old, was found to give the best feed efficiency but the smallest body weight of any of the treatments.

C. F. Abraham Dies

CHICAGO—Clarence F. Abraham, 64, died suddenly at his home in Beverly Hills, Chicago, recently. He was one of the founders and directors of Screw Conveyor Corp., Hammond, Ind., and served as vice president of the firm.

KILLED IN ACCIDENT

BLAKELY, GA. — Louis Roscoe Rogers, Blakely feed mill operator, was killed recently in a freak accident while assisting in repair of machinery at the feed mill he owned and operated with his brothers, Carroll Rogers and George Rogers, according to Sid Howell, sheriff. Witnesses said Mr. Rogers was attempting to turn a stuck corn auger with a wrench, when the switch operating the auger was accidentally turned on. The feed man was thrown against a sharp piece of metal and suffered fatal throat lacerations.

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Looks for 'Real Shakedown' in Broiler Industry

ITHACA, N.Y.—The current broiler situation "looks like the real shakedown, and there is a question in everybody's mind as to how many will be left when the shakedown is over," according to Dr. John Huttar of the Cooperative G.L.F. Exchange, Inc.

Writing in a G.L.F. publication, Dr. Huttar noted recently that, contrary to predictions, broiler prices this summer have continued weak, even though placements have been below a year ago.

He went on to say that he had discussed the outlook in the months ahead with broiler men in Texas, Arkansas, Georgia, Connecticut and Delmarva. Their views, he said, could be summed up like this:

1. They thought that government figures on broiler chicks started were not accurate and that quite a few more actually were started.

2. They were very pessimistic about the outlook, with most expecting no improvement until spring at the earliest.

3. They all reported a tightening of broiler money. In most instances this is simply because the money has run out. There will be some bankruptcies.

4. Only now are the hatcheries cutting back in their output of chicks. They expect this cut to be drastic in the next month or six weeks.

Oilseed Meal Losses Posted at Memphis

MEMPHIS, TENN. — Losses were posted on the two oilseed meal futures boards of the Memphis Board of Trade during the past week, despite two good rallies at the middle of the period.

Weakness in soybeans was reflected in increased selling pressure in new crop unrestricted soybean oil meal.

Additional spreading transactions between unrestricted soybean oil meal and bulk solvent cottonseed oil meal appeared, with considerable public interest revived in cottonseed oil meal. With price differences historically wide, both speculative and trade interests were attracted to these transactions.

Reports of nearby export business in old crop soybean business gave the August contract a firm tone at the middle of the period.

Mixed feed business was generally termed quiet, about in line with seasonal expectations.

Unrestricted soybean oil meal closed Aug. 18 50¢@$2 ton lower than on Aug. 11, while bulk solvent cottonseed oil meal ended 50¢ lower to 50¢ higher, and most contracts were losers.

Trading for the period amounted to 500 tons of unrestricted soybean oil meal and 1,600 tons of bulk solvent cottonseed oil meal.

Illinois Meetings

NEW BERLIN, ILL.—The Illinois Feed Assn. has announced plans for two regional feed meetings Aug. 25 and 27.

Panel discussions concerning a grain bank operation and bulk feed handling are scheduled for the ham and bean supper meeting at New Berlin, Aug. 25. Credit and collections are also scheduled for discussion.

Another dinner meeting is planned for Aug. 27 in Montrose (Effingham, Ill., on U.S. 40). The program will include a talk by Ivan Miller, president of the Illinois Feed Assn., and a panel discussion on grain banks and credit problems.

Eastern Rail Rate Reductions Studied

WASHINGTON — The Grain & Feed Dealers National Assn. reports it has been notified by Edgar V. Hill, chairman of the Traffic Executive Assn., Eastern Railroads, that a special grain committee of the Eastern Railroads is making a study of grain rates with respect to domestic adjustment on grain and grain products.

The grain committee is meeting in continuous session, it was indicated, but the work is delayed because the study of domestic rate adjustment is very complex. It will be some time before the committee will be ready to make recommendations to the Traffic Executives.

Mr. Hill said: "With the public docketing, public hearings, etc., that will be necessary if our Executives finally conclude to make some adjustment in these rates, I am sure such an adjustment could not be accomplished and made effective until the late spring of 1960."

HOG PAYMENT

(Continued from page 1)

defeat in the House of his mandatory barter proposal—see Capital Comment, page 8.)

Earlier this week, Marvin McLain, assistant secretary of agriculture, expressed administration objections to a compensatory payment plan. And even should Congress approve the measure, it would be certain to be knocked down by a White House veto which would be unlikely to be overridden in either chamber.

The payments to producers for marketing light weight hogs were proposed because of sagging hog prices in the face of big production.

COLORADO

(Continued from page 5)

ducers Marketing Assn. Meanwhile, action is already being taken by the group to consider feed bids for the purchase of all feeds through the group on a bulk feed delivery basis. Bids have already been submitted and consideration is being made of these bids at the present time.

The main purpose of the Producers Marketing Assn. is to market the producer products to their best advantage and afford the producer a bargaining position and also afford him a market outlet in the rapidly changing retail industry. Contacts have already been made by a number of market potentials; however, at this time these proposals are being considered and firm commitment on a marketing program will not be available until mid-September.

The Producers Marketing Assn. will work on the basis of a high quality egg program requiring quality control on the farm and on through to the retail outlet. This represents the first action taken by egg producers in Colorado to meet the changing demands of the market.

BROILER INDUSTRY

(Continued from page 1)

"Operation Upturn" will lead off immediately, according to Mr. Frazier, with a Bro-Hen sales campaign "to create markets for hens now ready to go to market and those which are expected within the next two months." Immediately behind that will come the council's "Golden Chicken El Dorado" sales campaign for broilers, which will continue into the holiday season.

Contacts have been made with the Army Quartermaster Corps, Foreign Agricultural Service, Plentiful Foods Program, school lunch officials, and the National Association of Food Chains, it was stated. Preliminary contacts with these groups were made prior to the meeting by the council's legislative committee, headed by Charles Miller, Piedmont, Ala., and officials of each organization appeared before the "Operation Upturn" meeting.

"This effort is not intended to solve every man's problems," Mr. Corbett stated, "nor to suggest what to do to solve them. Nor is it intended to indicate that a critical time can suddenly be turned around and be made into a good time.

"It is intended to unify the broiler industry at points where it can apparently be unified, and to seek solutions to problems which can help create a better climate in which individual businesses in this industry can survive.

"We started the meeting with the high hope that we could help unify the broiler industry behind a positive program. And I feel every man present will enthusiastically agree that this was accomplished."

GFDNA

(Continued from page 1)

of Agriculture; Jack Harris, traffic manager, Continental Grain Co., New York; F. R. Hediger, president, Garnac Grain Co., New York, and Charles B. Green, vice president and general manager, Globe Elevators, Duluth, Minn.

Ralph Brown, chairman of the national committe on uniform grades, has announced there will be a discussion of grain sorghum standards, soybean standards, truck lot inspections and inspection service on the St. Lawrence Seaway.

Joe Gregg, chairman of the national grain sanitation committee, has scheduled a meeting to discuss Food and Drug Administration procedures in grain sanitation enforcement.

Other meetings scheduled include the national feed committee, Frank Heffelfinger II, chairman; Federation of Cash Grain Commission Merchants, Warren Root, president, and the national feed ingredients distributors committee, George La Budde, chairman.

COST DATA

(Continued from page 1)

out, in equipment capacity, in production line balance, and in storage capacity is resulting in repeated delays in the manufacturing process," the engineers said.

"These delays result in low equipment utilization, low labor productivity, and in an increase in costs."

Also, it was reported, study has revealed that "little of the wealth of information available from the Feed Production School is being put to use in the mills."

"No overall formula can be just simply applied to all mills that will achieve the desired improvements," said Mr. Bohl. "Mills differ in their particular situations, and each mill must examine its own operations and its own needs to determine what steps to take. Those mills which do not will find themselves in growing difficulties with each passing month."

Recommendations

The study recommended four broad measures to remedy the situation:

1. Do a better job of engineering for plant layout and equipment requirements.

2. Take steps to improve line balance to assure employee and equipment utilization.

3. Select and train operators and install a sound wage incentive program.

4. Set up proper scheduling techniques and make the plant superintendent responsible for plant production.

Suggested solutions to these problems will be presented at the Feed Production School in September, Mr. Bohl said.

MILK COWS

(Continued from page 1)

In the north central states, which account for almost half of the milk cows in U.S. herds, June, 1959, cow numbers showed the sharpest drop from a year earlier. All north central states except Wisconsin and Minnesota recorded the lowest June numbers in records dating back through 1930.

In the heavy fluid milk producing states of the North Atlantic, June cow numbers were down 2% from a year earlier and reached a new record low. In the South Atlantic, cow numbers decreased only 1% for the region as a whole. Cow numbers dropped substantially in the south central region, reaching a new 30-year record low. In the West, where cow numbers have remained relatively stable for the past 10 years, the cow population for June, 1959, showed about a half per cent increase over a year ago.

Number of Milk Cows on Farms, June, by States, 1948-57 Average, 1956-59

State and division	Average 1948-57	1958*	1959†	1959 as % of 1958
	thousands			%
Maine	111	101	96	95
N. Hamp.	61	54	51	94
Vermont	269	263	260	99
Massachusetts	118	101	97	96
Rh. Island	18	16	16	100
Connecticut	107	98	94	96
New York	1,327	1,280	1,250	98
New Jersey	150	138	136	99
Pennsylvania	914	930	921	99
N. Atlantic	3,075	2,981	2,921	98.0
Ohio	904	789	765	97
Indiana	639	515	488	95
Illinois	859	720	690	96
Michigan	834	760	748	98
Wisconsin	2,235	2,231	2,176	98
E. N. C.	5,471	5,015	4,867	97.0
Minnesota	1,368	1,334	1,305	98
Iowa	1,073	957	905	95
Missouri	891	761	725	95
No. Dakota	370	324	313	97
So. Dakota	318	290	279	96
Nebraska	442	381	361	95
Kansas	514	394	379	96
W. N. C.	4,976	4,441	4,267	96.1
Delaware	35	31	30	97
Maryland	230	230	228	99
Virginia	416	373	368	99
W. Virginia	198	172	168	98
No. Carolina	358	354	349	99
So. Carolina	150	146	140	96
Georgia	319	290	281	97
Florida	160	212	225	106
S. Atlantic	1,866	1,808	1,789	98.9
Kentucky	592	566	566	100
Tennessee	627	590	576	98
Alabama	359	324	318	98
Mississippi	509	480	456	95
Arkansas	375	291	281	97
Louisiana	295	287	284	99
Oklahoma	469	344	340	99
Texas	890	690	664	96
S. Central	4,116	3,572	3,485	97.6
Montana	106	90	87	97
Idaho	204	212	219	103
Wyoming	43	36	36	100
Colorado	162	136	132	97
N. Mexico	50	47	48	102
Arizona	47	50	51	102
Utah	100	99	100	101
Nevada	14	14	14	100
Washington	257	250	247	99
Oregon	202	179	179	100
California	813	869	878	101
West.	1,998	1,982	1,991	100.5
U. S.	21,502	19,799	19,320	97.6

*Revised. †Preliminary.

New Pellet Machine Will Be Produced

ROSEBURG, ORE.—A pellet machine invented by E. S. Kennedy of Roseburg is scheduled to go into production soon. Mr. Kennedy started working on plans for the machine five years ago, it was reported.

A group of Roseburg investors headed by Dr. H. K. Williams and A. J. Bishop is backing the venture.

The machine will convert more than five tons of hay and grain an hour into pellets, it was reported.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

A AND D FEEDING OIL

New York: Demand and supply good; trend firm; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Chicago: Demand quiet; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 17½¢; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14¾¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14½¢ lb.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 22¢ lb., f.o.b. Denver.

Minneapolis: Demand fair; supply ample; 10,000 A 34½¢ lb.; 300 D, 2,250 A 19¢ lb.; 300 D, 1,500 A 17½¢ lb.; 300 D, 750 A 16¢ lb.

ALFALFA MEAL

Chicago: Demand fair; trend steady; supply ample; carlots, 17% protein, dehydrated, with 100,000 units vitamin A guaranteed $53.50.

Los Angeles: Demand slow; trend unchanged; supply limited; dehydrated meal, 17% protein, 100,000 A $50, bulk; dehydrated pellet meal, 17% protein, 100,000 A $52@53, bulk; suncured meal, 15% protein $43@44, bulk; suncured crumbles, 15% protein $45@46, bulk.

Kansas City: Demand slow to fair; trend steady; supply ample, although bulk of material is going into store; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival, regular meal $45@47, sacked; reground pellets $47, sacked; pellets $41@42, bulk, with blenders holding price steady at higher level; 18% protein, 125,000 units A meal $51, sacked; 20% protein, 150,000 A meal $57, sacked; 15% protein, non-guaranteed A meal $42@43, sacked; suncured demand is very slow with prices unchanged and supplies limited, No. 1 fine ground $40@41, No. 1 ¼-in. $38@39, No. 2 ¼-in. $35@36, sacked.

St. Louis: Demand slow; trend steady; supply ample; suncured, 13% fine $42; dehydrated, 17%, 100,000 A demand fair, trend steady, supply ample $52.

Buffalo: Demand fair; trend steady; supply good; $62, sacked, Boston.

Philadelphia: Demand and supply fair; 17% dehydrated $63.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $54.80.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $41; sacked meal $46, Omaha basis.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59.50@60.50.

New Orleans: Demand steady; trend firm; supply adequate; vitamin A 17% $58@59; pellets $53@54.

Ft. Worth: Demand fair to good; supply adequate; dehydrated, 17%, 100,000 A $55.80 rail, truck $54; suncured 13% ¼-in. grind $43 truck.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $45, delivered, truck loads; 136,000 A unit dehydrated $68, delivered, truck loads.

Portland: Demand good; supply ample; trend unchanged; suncured, 15% $40; dehydrated $63.40.

Boston: Demand fair; supply adequate; dehydrated, 17% $63; suncured, 13% $46.50.

Denver: Demand good; trend strong; supply ample; dehydrated $46, Denver.

Minneapolis: Demand good; supply adequate; trend steady; 17% dehydrated, 100,000 units vitamin A, reground pellets $48, bulk, Minneapolis; oiled reground pellets $50, bulk; sacks $4 more.

ANIMAL FAT (STABILIZED)

St. Paul: Demand fair; supply ample; bleachable fancy tallow 6¼¢ lb., f.o.b. producer's plant.

Kansas City: Demand slow; trend steady; supply adequate; prime tallow 6¢ lb., tank car.

San Francisco: Demand fair; supply ample; bleachable fancy 6¾¢ lb.; yellow grease 5¾¢ lb.

Chicago: Demand fair; trend steady; supply ample; tank, truck or carlots, bleachable fancy tallow $6.75 cwt.; yellow grease $6.37½ cwt.

New Orleans: Demand fair; trend steady; supply adequate; 6½@7¢ lb., tank cars.

Ft. Worth: Demand fair; supply ample; prime tallow, tank cars 6¼¢ lb.; drums 8½¢ lb., f.o.b. northern Texas packing plants with returnable drums.

Boston: Demand steady; supply adequate; tallow 6¼¢ lb.; yellow grease 5¾¢ lb.

Louisville: Demand very dull; trend very weak; supply excellent; bleachable white 6¢ lb., off ⅛¢ lb.; white tallow 6⅛¢ lb., off ⅛¢ lb.; yellow grease 5⅝¢ lb., off ⅛¢ lb.

Atlanta: Demand fair; trend steady; supply ample; 5⅞¢ lb., bulk, f.o.b. Georgia and Alabama producing mills.

BARLEY FEED

Ogden: Supply average; rolled $46@51; whole $38@43.

Seattle: Demand and supply good; trend firm; $45, bulk, truck loads, new crop.

San Francisco: Demand fair; supply ample; rolled $56.50, ground $55.50.

Chicago: Demand better; trend higher; supply fair; $37, carlots.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

Baltimore: Demand slightly broader; trend higher; supply fair; $47.50, carlots.

Los Angeles: Demand slow; trend stronger; supply ample; standard rolled $3.03 cwt., sacked; standard ground $3.03 cwt., sacked.

Portland: Demand good; supply ample; trend unchanged; rolled $56, ground $54.

New Orleans: Demand slow; trend unchanged; supply ample; $55@56.

Philadelphia: Demand slow; supply fair; $47.

Boston: Demand fair; supply ample; $47.

BENTONITE (SODIUM)

Chicago: F.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Denver: Demand fair; supply ample; trend good; $21.

BLOOD FLOUR

Louisville: Demand dull; trend steady to weak; supply good; $75@80.

BLOOD MEAL

Omaha: Demand and trend fair; supply good; $95, Omaha basis.

Portland: Demand slow; supply ample; trend unchanged; $115.

Los Angeles: Demand slow; trend unchanged; supply light; $5.75 a unit of ammonia.

Chicago: Demand fair; trend firm; supply ample; carlots, guaranteed 80% protein, in 100-lb. bags $120.

San Francisco: Demand fair; supply ample; $6 a unit of ammonia.

Louisville: Demand dull; trend steady to weak; supply good; $75@80.

New Orleans: Demand slow; trend unchanged; supply normal; $80@85.

Ogden: Supply average; $95, in 100-lb. bags, f.o.b. Ogden.

BONE MEAL (STEAMED)

Seattle: Demand good; trend firm; supply limited; $89, delivered truck lots.

Ft. Worth: Demand poor; supply light; $90, sacked, f.o.b. Ft. Worth, local manufacture.

Cincinnati: Demand fair; trend steady; supply ample; $95, Cincinnati.

Portland: Demand slow; supply ample; trend unchanged; $102.

Buffalo: Demand good; trend strong; supply limited; $105, sacked.

San Francisco: Demand good; supply ample; $75.

Chicago: Demand good; trend steady; supply ample; carlots, in 100-lb. bags $97.50.

Los Angeles: Demand fair; trend unchanged; supply adequate; imported $78 in 20-ton lots.

New Orleans: Demand fair; trend easy; supply ample; $85@90.

Boston: Demand and supply steady; $100.

Denver: Demand good; trend steady; supply ample; $103.20, Denver.

Louisville: Demand dull; trend steady; supply light; $75@80.

BREWERS DRIED GRAINS

Philadelphia: Demand slow; trend unsettled; supply fair; $52.

Buffalo: Demand and supply fair; trend steady; $41.50, bulk, Boston.

San Francisco: Demand fair; supply ample; $54.

Los Angeles: Demand slow; trend unchanged; supply adequate; $49.50, bulk; $53.50, sacked.

Chicago: Demand and supply fair; trend firm; carlots, 26% protein $43.50.

St. Louis: Demand fair; trend steady; supply ample; $42.

Cincinnati: Demand poor; trend steady; supply adequate; $51.

Boston: Demand steady; supply adequate; 26% $51; 24% $50; 22% Canadian $50.

New Orleans: Demand fair; trend easy; supply ample; $49@51.

Ft. Worth: Demand fair; supply sufficient; 26% protein $49@50, August, delivered Ft. Worth.

Louisville: Demand slow; trend steady; supply good; $46.

BREWERS DRIED YEAST

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Chicago, Milwaukee and St. Louis: Demand fair; trend steady; supply ample; per lb. carlots 9½@10½¢; l.c.l. 9¼@12¼¢.

Los Angeles: Demand slow; trend unchanged; supply adequate; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Buffalo: Demand fair; trend steady; supply ample; $9.25 cwt.

San Francisco: Demand fair; supply good; 10¢ lb.

Omaha: 10½¢ lb.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Boston: Demand and supply steady; 11¢ lb.

Denver: Demand light; trend steady; supply ample; 8¢ lb., f.o.b. Golden, Colo.

Louisville: Demand slow; trend steady; supply good; 10@10½¢ lb.

St. Louis: Demand good; trend steady; supply ample; carlots $9.50@10 cwt.; ton lots $10.50 cwt.; less than ton lots $11.50 cwt.

Milwaukee: Demand fair; trend steady; supply adequate; carlots $10@11 cwt.; l.c.l. $10.50@12.25 cwt.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

BUTTERMILK-CONDENSED

Philadelphia: Demand slow; supply light; $4.25 cwt.

New Orleans: Demand slow; trend unchanged; supply average; $4.25@4.30 cwt.

Ogden: Supply normal; $4.40, 100-lb. drum.

Boston: Demand slow; supply tight; 3¾¢ lb.

San Francisco: Demand fair; supply good; $5 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Chicago: Demand fair; trend firm; supply ample; $3.25@3.50 cwt.

Louisville: Demand nil; trend steady; supply nil; $4.25 cwt.

CALCIUM CARBONATE

Chicago: Demand steady; trend firm; supply adequate; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk in box cars $8.04; granular grind $1 premium.

Los Angeles: Demand slow; trend unchanged; supply adequate; flour $10.15, sacked, 20-ton cars; meal $11.15, sacked, 20-ton cars.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Seattle: Demand and trend steady; supply good; $14, truck lots.

Minneapolis: Fine grind, 50-lb. bags $12.25, 100-lb. bags $11.50; bulk, boxcar $10; bulk hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CHARCOAL

Chicago: Demand and supply fair; trend steady; carlots, in 50-lb. multiwalls $110.

San Francisco: Demand steady; supply ample; $141.

Los Angeles: Demand fair; trend unchanged; supply adequate; hardwood poultry $156, sacked, in less than ton lots; $144.40, sacked, in ton lots.

Boston: Demand and supply steady; $110.

COCONUT OIL MEAL

San Francisco: Demand good; supply tight; solvent $68.

Los Angeles: Demand steady; trend unchanged; supply limited; copra cake $75, bulk, September delivery.

Seattle: Demand fair; trend firm; supply ample; $80, delivered, truck (California).

Portland: Demand slow; supply ample; trend unchanged; $68.

COD LIVER OIL (FORTIFIED)

New York: Demand and supply good; trend firm; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 500 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand and supply steady; 600 D, 2,250 A 19¢ lb.; 600 D, 1,500 A 18¢; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 300 D, 1,500 A 17¢.

CONDENSED FISH SOLUBLES

New York: Demand fair; trend steady; supply tight; 3½@3¾¢ lb., f.o.b. eastern shore.

Los Angeles: Demand slow; trend unchanged; supply adequate; 4.54¢ lb.

New Orleans: Demand light; supply normal; trend steady; $60@70, f.o.b. Gulf.

Boston: Demand and supply good; 4½¢ lb.

Denver: Demand fair; trend steady; supply ample; dried $167, Denver.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $1 less)

Minneapolis: Feed $46.90, meal $67.90.
Atlanta: Feed $52.98, meal $73.98.
Birmingham: Feed $51.64, meal $72.64.
Boston: Feed $51.94, meal $72.84.
Chicago: Feed $40, meal $61.
Cleveland: Feed $48.14, meal $69.14.
Denver: Feed $50.51, meal $71.51.
Ft. Worth: Feed $48.96, meal $69.96.
Indianapolis: Feed $45.36, meal $66.36.
Kansas City: Feed $40, meal $61.
Louisville: Feed $47.21, meal $68.21.
New Orleans: Feed $50.20, meal $71.20.
New York: Feed $52.43, meal $73.43.
Norfolk: Feed $50.71, meal $71.71.
Philadelphia: Feed $51.02, meal $72.02.
Pittsburgh: Feed $48.96, meal $69.96.
St. Louis: Feed $40, meal $61.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $46.50.

Louisville: Demand slow; trend steady; supply light; $49.45.

COTTONSEED OIL MEAL

Cincinnati: Demand fair; supply adequate; immediate shipment $72.50; September shipment $60.

Chicago: Demand good; supply light; quoting on new crop, September through December shipment: carlots, Memphis basis, hydraulic $54@55, solvent $53.

San Francisco: Demand good; supply tight; 41% $77; 44% $78.50.

Los Angeles: Demand moderate; trend unchanged; supply limited; $72@73, bulk.

Buffalo: Demand fair; trend easier; supply good; $72.75, Boston.

Kansas City: Demand slow; trend steady; supply adequate from Texas points but none available in Memphis area and new crop production still several weeks away; solvent meal $57, sacked, Lubbock; old process meal $56@57, sacked, Texas points.

St. Louis: Demand slow; trend steady; supply limited; solvent $72.

Ft. Worth: Demand poor; supply sufficient; 41% old process $60@62; solvent, 1% fat added $60.20; pellets $2 additional; cottonseed hulls $17, sacked.

Seattle: Demand fair; trend firm; supply ample; 41% expeller process $86, prompt delivered, truck lots; $81, delivered, truck (new crop, September delivery).

New Orleans: Demand fair; trend unchanged; supply limited; $79@80.

Memphis: Demand quiet; trend steady; supply limited; prime 41% protein, old process $65 nominal, sacked; new process, 41% solvent $64 nominal, sacked.

Portland: Demand slow; supply limited; trend unchanged; $80.

Boston: Demand very slow; supply adequate; $76@77.

Omaha: Demand poor; trend easy; supply ample; 41% solvent $61, bulk, delivered, Omaha.

Philadelphia: Demand spotty; trend unsettled; supply fair; $66.

Denver: Demand fair; trend steady; supply ample; $66.60, Denver, sacked basis, 2% fat.

Ogden: Supply normal; 41% $80@85.

Wichita: Demand fair; supply sufficient; 41% old process $72.50.

Louisville: Demand dull; trend fairly steady; supply light; old process $74; new process $72.

Atlanta: Demand good; trend steady; supply limited; 41% $56, f.o.b. Georgia, Alabama and South Carolina producing mills.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

New York: Demand and supply good; trend firm; price per lb. in 50- and 100-lb. bags, or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; carlots $63.50, truck load $64.25, net ton, f.o.b. Coronet in 100-lb. multiwall bags $60.50 and $61.25 in bulk.

Cincinnati: 18% phosphorus $81; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50 net ton, f.o.b. Houston, 100-lb. multiwall paper bags, $68.50 in bulk.

DICALCIUM PHOSPHATE

Cincinnati: 18½% phosphorus $92@93.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Portland: Demand slow; supply ample; trend unchanged; $115.

Denver: Demand fair; trend steady; supply ample; $95.60 delivered in Denver.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine 0.003% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21% maximum fluorine 0.003% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

DISTILLERS DRIED GRAINS

San Francisco: Demand fair; supply ample; solubles $85.

Buffalo: Demand fair; trend easier; supply good; $55.50, bulk, Boston.

Philadelphia: Demand slow; supply light; $60.50.

Cincinnati: Demand poor; trend steady; supply adequate; $49.50.

Seattle: Demand good; trend steady; supply limited; $67.50, delivered, truck lots.

Boston: Demand fair; supply steady; dark and medium dark $55 bulk, light $56 bulk.

Louisville: Demand slow; trend steady; supply light; production will improve in September; bourbon: light $50.50, dark $52.50, solubles $79.

DRIED BEET PULP

Seattle: Demand good; trend firm; supply limited; $52, delivered, carlots.

Portland: Demand good; supply ample; trend unchanged; $56.40, California.

San Francisco: Demand good; supply fair; $42.80, bulk.

Buffalo: Demand fair; trend easier; supply good; $50, Boston.

Los Angeles: Demand steady; trend unchanged; supply moderate; molasses $47.80 @48.60.

New Orleans: Demand and supply fair; trend unchanged; $62@63.

Ft. Worth: Demand slow; light offerings; carlots, 50-lb. papers $60.50, August, delivered Ft. Worth.

Ogden: Supply average; $44@48.

Boston: Demand very slow; supply ample; $50.

Denver: Demand good; trend steady; supply ample; $49.23, delivered in Denver.

Atlanta: Demand fair; trend steady; supply limited; $58.20@63.85, delivered.

DRIED BUTTERMILK

Los Angeles: Demand slow; trend unchanged; supply adequate; 11¾¢ lb.

Chicago: Demand good; trend steady; supply ample; per cwt., medium acid $10.60@10.80, sweet cream $11@11.25.

Buffalo: Demand good; trend steady; supply limited; $11.75 cwt.

San Francisco: Demand fair; supply ample; 11½¢ lb.

Ogden: Supply normal; $8.50, 100-lb. bag.

New Orleans: Demand fair; trend easy; supply normal; $11.50@12 cwt.

Louisville: Demand slow; trend steady; supply light; 11½@12¢ lb.

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DRIED CITRUS PULP

New Orleans: Demand fair; supply good; trend strong; $40@45, f.o.b. Florida points.

San Francisco: Demand and supply fair; meal $54.

Los Angeles: Demand steady; trend unchanged; supply adequate; orange pulp $41, bulk; lemon pulp $40, bulk.

Buffalo: Demand fair; trend lower; supply good; $36.50, f.o.b. Florida points.

Boston: Demand fair; supply adequate; $35, f.o.b. Florida.

Portland: Demand slow; supply ample; trend unchanged; 13¢.

Atlanta: Demand fair; trend steady; supply ample; $35, f.o.b. Florida producing mills; meal $30, f.o.b. Florida producing mills.

DRIED SKIM MILK

Chicago: Demand fair; trend firm; supply ample; $10.40@10.65 cwt., f.o.b. plant.

San Francisco: Demand and supply fair; 13½¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.

New Orleans: Demand fair; trend unchanged; supply ample; $11@11.50 cwt.

Boston: Demand good; supply light; 12¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.

Ogden: Supply normal; $15.15, 100-lb. drum.

Philadelphia: Demand slow; supply light; $12.50.

Louisville: Demand slow; trend steady; supply light; 11@11½¢ lb.

Minneapolis: Demand good, but slightly slower than last week; 11¢ lb.

DRIED WHEY

Boston: Demand active; supply light; 5½¢ lb., f.o.b. shipping points.

Denver: Demand fair; trend steady; supply ample; $6.50 cwt.

Wichita: Demand fair; supply sufficient; $6.50 cwt.

Ogden: Supply average; $6.90, 100-lb. bag.

Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.

Philadelphia: Demand slow; supply light; $6.50 cwt.

Seattle: Demand and trend steady; supply good; $6.40 cwt.

Kansas City: Demand fair; trend steady; supply adequate; regular and partially delactosed $5.50 cwt., producers' plants.

Los Angeles: Demand slow; trend unchanged; supply adequate; $6.10 cwt., carloads; $6.35 cwt., l.c.l.

San Francisco: Demand steady; supply good; $5.75 cwt.

Chicago: Demand fair; trend steady; supply adequate; $5.50 cwt., f.o.b. plant.

Portland: Demand slow; supply ample; trend unchanged; $6.80 cwt.

New Orleans: Demand good; trend easy; supply ample; $6@6.50 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 sacked, delivered Ft. Worth; $6.25 ton lots, f.o.b. warehouse Ft. Worth.

Louisville: Demand slow; trend steady; supply ample; 6½¢ lb.

Minneapolis: 40 mesh $5.65 cwt.; standard $5.50 cwt., producer's plant.

FEATHER MEAL (HYDROLYZED)

Boston: Demand quiet; supply very short; $85, nominal.

Los Angeles: Demand fair; trend weaker; supply adequate; $1 a unit of protein.

Atlanta: Demand fair; trend steady; supply ample; $86, f.o.b. Georgia and Alabama producing mills.

Ft. Worth: Demand and supply fair; 85% to 87% protein $86, f.o.b. trucks, north Texas plants.

Salisbury, Md.: Demand good; supply limited; $96, f.o.b. bulk, sacked $4 more.

FISH MEAL

Buffalo: Demand just fair; supply ample; trend steady; 60% protein menhaden $140 bulk, $145 sacked.

Los Angeles: Demand improved; trend steadier; supply small; local production, 60% protein $2.15 a unit.

San Francisco: Demand slow; supply ample; $2.10 a unit of protein.

Chicago: Demand poor; trend easier; supply good; menhaden, eastern $126@130 and scrap $122@126; Gulf $126@130 and scrap $122@126; northeast red fish meal $130.

Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $176@178.

Omaha: Demand fair; trend good; supply adequate; 60% menhaden $145.

Cincinnati: Demand fair; trend steady; supply adequate; $160.

Portland: Demand slow; trend lower; supply ample; $2.05 a unit.

Boston: Demand steady; supply good; 60% menhaden $130.

Denver: Demand fair; trend steady; supply ample; $2.20 a unit of protein, f.o.b. West Coast.

Ft. Worth: Demand fair to good; supply adequate; 60% menhaden $135; 60% Angola $137, delivered Ft. Worth.

New Orleans: Demand fair; trend steady; supply normal; menhaden 60% $126@128; $122@124, f.o.b. Gulf.

Seattle: Demand and supply good; trend steady; $2.15 a unit protein, ex-dock (new crop Alaska).

Louisville: Demand slow; trend steady; supply light; $160.

Minneapolis: Market firmed up; demand good; supply adequate; little trading in Gulf menhaden; 60% blended $147@153; 70% herring $2 a unit of protein, f.o.b. Canadian coast.

Atlanta: Demand fair; trend weak; supply good; 60% menhaden $25, f.o.b. Atlantic ports, August, September and October.

HAY

Louisville: Demand dull; trend stronger; supply good; No. 1 hay, timothy, clover, mixed or alfalfa, $25, extra fancy $30; No. 2 $23; straw, any variety, $20.

Philadelphia: Demand slow; supply light; $25@26.

Boston: Demand slow; supply spotty; No. 2 timothy (old crop) $41@44.

Denver: Demand fair; trend good; supply ample; $24@25 on new hay, second cutting alfalfa, baled.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

Seattle: Demand good; trend firm; supply fair; U.S. No. 2 green alfalfa (new crop) $33, delivered, truck lots.

Portland: Demand good; supply ample; trend unchanged; $32.

Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $34@36, No. 2 $32@34; No. 2 prairie $24@26; No. 2 Johnson grass $22@24, delivered Texas common points.

Ogden: Supply normal; $1@1.25 bale; $20 ton in the field.

Wichita: Demand fair; supply sufficient; prairie $17.50, alfalfa $15@18.

Los Angeles: Demand good; supply limited; U.S. No. 1 $33@35; U.S. No. 2 leafy $31@32; U.S. No. 2 green $31@32; U.S. No. 2 $28@30.

HOMINY FEED

Buffalo: Demand fair; trend steady; supply good; $46, bulk, Boston.

St. Louis: Demand fair; trend steady; supply ample; $43.

Kansas City: Demand good; trend steady; supply fairly tight; yellow $34.50@35, bulk, white $1 less.

Chicago: Demand quiet; trend firm to trifle up; supply fair; carlots $40.50@41.

Memphis: Demand poor; trend weak; supply ample; white $42, yellow $43.

Cincinnati: Demand fair; trend steady; supply adequate; $44.

New Orleans: Demand slow; supply adequate; trend steady; $48@48.50.

Seattle: Demand fair; trend firm; supply good; $57, delivered, sacked, carlots.

Boston: Demand and supply steady; $46.50.

Louisville: Demand dull; trend weak; supply fair; August $45, September $47; October, November, December $45 on contract.

LINSEED OIL MEAL

New Orleans: Demand slow; supply ample; trend steady; $80@81.

Minneapolis: Demand good, strengthened by export increase; flax shortage has contributed to very strong trend; solvent $64.50 nearby, $65 September and $66 October-December.

Denver: Demand fair; trend firm; supply ample; $82.94, sacked, Denver.

Boston: Demand slow; supply light; $90.

Cincinnati: Demand poor; trend steady; supply adequate; new process $80, old process $88.

Portland: Demand slow; supply limited; trend unchanged; $87.

Philadelphia: Demand slow; supply fair; 34% $86.25.

Seattle: Demand fair; trend steady; supply limited; $90, delivered, car loads, 34% protein (Montana).

Ft. Worth: Demand slow; supply light; Texas production, 34% old process $81, rail or truck.

Wichita: Demand fair; supply sufficient; 34% $82.50.

Omaha: Demand fair; trend strong; supply tight; 34% solvent $70.80 bulk; 32% old process $78.30, Omaha basis.

Louisville: Demand dull; trend strong; supply light; foreign demand reported to have developed and run up prices; old process $91, up $3; new process $82.50, up $2.

Kansas City: Demand slow; trend steady; supply adequate for demand; old process $71.50@72, bulk, Minneapolis; solvent $64 @64.50.

San Francisco: Demand fair; supply ample; $77.50.

Los Angeles: Demand fair; trend unchanged; supply limited; local production, 29% protein $71, bulk, new crop.

Chicago: Demand improved; trend higher; supply moderate; carlots, Minneapolis basis, solvent $64, expeller $72.

LIVER AND GLANDULAR MEAL

Omaha: Demand good; trend steady; supply light; 65% $210, Omaha basis.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $42.

New Orleans: Demand fair; supply ample; trend steady; $40@42.

Boston: Demand and supply light; No. 1 $42.50.

Chicago: Demand fair; trend steady; supply good; carlots, No. 1, uneven bags $34; bulk $27.

MEAT AND BONE MEAL

St. Louis: Demand slow; trend lower; supply ample; $50.

Kansas City: Demand fair; trend steady; supply adequate for demand; 50% meat and bone scraps $50, sacked.

St. Paul: Demand fair; supply adequate; continued downward trend; $80@84.

Buffalo: Demand just fair; trend easier; supply ample; 50% meat scraps $77.50 bulk, $82.50 sacked.

Los Angeles: Demand slow; trend weak; supply moderate; 50% protein $1.65 a unit, bulk.

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

New York: Demand poor; trend lower; supply fair; 50% $70, 55% $77.50, bulk; 50% $72.50, 55% $80, sacked.

Chicago: Demand fair; trend steady; supply adequate; carlots, 50% protein, in 100-lb. bags $87.50.

Cincinnati: Demand fair; trend steady; supply good; 50% meat and bone scraps $80, Cincinnati.

New Orleans: Demand easy; trend steady; supply ample; $90@93.

Denver: Demand soft; trend steady; supply ample; 50% $80, bagged, truck lots; $77, bulk lots.

Ft. Worth: Demand fair; supply ample; meat and bone, 50% $79.50, f.o.b. or delivered Ft. Worth.

Seattle: Demand good; trend weak; supply ample; $80, 50% protein.

Portland: Demand slow; supply ample; trend unchanged; $1.60.

Omaha: Demand fair; trend steady; supply good; $80.

Wichita: Demand heavy; supply sufficient; 50% $97.50, f.o.b. plant; 55%, no quotations, no offerings.

Louisville: Demand slow; trend steady to weak; supply good; $80@85.

MILLFEED

Minneapolis: Upturn in prices, especially for bran, following better demand and shorter supplies; middlings $32@33, bran $33@33.50, red dog $45.50@51.50.

Kansas City: Demand fair for sacked feeds; trend steady; supply ample; bran $31.50@32.25, shorts $35.50@36.25, sacked; bran $25.50@26.25, shorts $31@31.75, middlings $26.25@27, bulk.

Wichita: Demand good for bran, fair for shorts; supply adequate; basis Kansas City: bran $29.75@30.25, shorts $35.25@35.75; bran declined $1.50 and shorts $5, compared with the preceding week.

Ft. Worth: Demand on bran and middlings tight, good demand on shorts; supply increasing; carlots, burlaps, bran $39, gray shorts $44.50; bulk middlings $37, delivered Texas common points; $3 higher on bran, $1.50 lower on shorts, and $1.25 higher on middlings compared with previous week.

Chicago: Price readjustments during the week ending Aug. 19 were similar the previous week—generally easier trend noted but no severe declines. For the week as a whole, the market had an easy undertone although the last day or two, it seemed inclined to level off preliminary to either a further continuation of scaling down in asking prices or a possible reversal of trend. Offers have been on the plentiful side and demand has been just aggressive enough to cushion the selloffs. Another week of beneficial rains, coupled with the kind of temperatures that adds kernels to the cobs, has in all probability resulted in erasing more of the spread between the July and August government estimates on corn. Some well-informed people in the feed trade are of the opinion that the first bushel estimate made by the U.S. Crop Reporting Board this summer will prove to have been substantially correct. All of which tends to cast a shadow over the potential demand for some of the constituent feeds—millfeeds among them. Quotations: Chicago basis, carlots: standard bran, sacked $37.50 and bulk $30; standard midds., sacked $37 and bulk $31 @31.50; red dog, sacked $50.50 and bulk $46.50.

Cincinnati: Demand fair; trend of bran higher; middlings lower; supply adequate; bran $41, middlings $42.

Omaha: Demand good; trend steady; supply ample; sacked bran $31.50; sacked gray shorts $36; bulk standard midds. $28.50; all Omaha basis.

Boston: Demand slow; supply ample; bran $45.50, middlings $49.

Buffalo: Millfeeds worked lower last week on spotty demand and competition on middlings from the West. Both medium and large mixers and the country trade's business were at a low ebb. The sacked differential on bran and middlings widened to $5.50 from $5. Bulk bran ended off $1, sacked unchanged to up 50¢; bulk middlings down $3 and sacked off $2.50; bulk red dog declined $1 and sacked dropped $1@3. Quotations Aug. 19: bulk bran $30.50 @31.50, sacked $36@37; bulk middlings $32, sacked $37.50@39; bulk red dog $50@52.50, sacked $54.50@57.50.

New York: Demand fair; trend lower; supply good; bran $43.50@44; standard midds. $45.50@46.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $44, standard midds. $47, red dog $64.

New Orleans: Demand fair; trend steady; supply normal; bran, sacked $43.25@44, bulk $39.50@40.25; shorts, sacked $52.75@53.50, bulk $48.50@46.25.

Memphis: Demand fair to poor; trend steady to weak; supply ample; wheat bran $38.30, sacked; gray shorts $43.30, sacked; standard midds. $34.70, bulk.

Louisville: Demand dull; trend very weak; supply good; bran $40.60, off $2; mixed feed $43.85, off $3.75; shorts $47.60, off $5.50; middlings $42.80, off $3.50.

Seattle: Demand good; trend strong; supply limited; $45, delivered common transit points, carlots.

Portland: Demand good; trend higher; supply limited; $44.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $41, middlings $46; to Denver: red bran and mill run $48, middlings $53; to California: red bran and mill run $48.50, middlings $53.50, f.o.b. San Francisco and Los Angeles.

Denver: Demand fair; trend steady; supply ample; shorts $38.75, bran $33.25, mill run $36.

San Francisco: Demand good; supply tight; millfeed $49.50; red bran $54.50.

Los Angeles: Standard mill run $45@45.50, bulk, demand limited, trend steady, supply adequate; red bran $44@46, bulk, demand improved, trend steady, supply adequate.

MOLASSES

Atlanta: Demand fair; trend steady; supply ample; citrus $18@22.50, bulk, f.o.b. Florida producing mills.

New Orleans: Demand good; supply ample; trend steady; 11¢ gal. tank cars and trucks; 600 lb. customers drums, $8.15.

Seattle: Demand fair; trend easy; supply good; $21.50, f.o.b. Seattle, tank car lots or truck lots.

Minneapolis: Demand fair; supply ample; trend steady; $31.50, tank trucks, delivered.

Cincinnati: Demand fair; trend steady; supply adequate; 11¢ gal., New Orleans.

Kansas City: Demand fair; trend weaker; supply ample; 10½@10¾¢ gal., tank car, New Orleans, mostly at 10¾¢.

Los Angeles: Demand good; trend steady; supply adequate; $21, bulk, f.o.b. tank cars; $21.25, bulk, f.o.b. tank trucks.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

NIACIN

New York: Trend steady; $6 kilo, 10-kilo lots; $6.20 kilo, 5- and 2½-kilo lots; $6.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Los Angeles: Demand fair; trend stronger; supply tighter; pulverized, local production $61, sacked.

Minneapolis: Demand slow; supply good; trend steady; feeding rolled oats $80, feeding oatmeal $68.50, standard pulverized $46, crimped $59, reground oat feed $23.

Chicago: Demand and supply fair; trend steady; carlots, reground oat feed $16; No. 1 fine ground feeding oatmeal $80; feeding rolled oats $79@82.

Boston: Demand improved; supply spotty; white pulverized $58.50; reground oat feed $27@28.

Seattle: Demand and supply fair; trend steady; $48, bulk, delivered truck lots (new crop).

Memphis: Demand poor; trend weak; supply ample; 3½% protein, reground oat feed $22.75.

OYSTER SHELL

Cincinnati: Demand fair; trend steady; supply adequate; $24.45.

New Orleans: Demand and supply good; trend steady; $23@24.

Portland: Demand good; supply ample; trend unchanged; western $34, eastern $39, granite grits $28, shell flour $24.

Los Angeles: Demand fair; trend unchanged; supply adequate; $14.80, sacked.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% solvent $60, f.o.b. Alabama producing mill.

PEAT MOSS

San Francisco: Demand and supply fair; $3.65 a bale.

Chicago: Demand fair; supply adequate; trend steady; standard 7½ cu. ft. bales $3.80.

Seattle: Demand and supply good; trend firm; $2.80 a bale, delivered, truck lots.

Boston: Demand and supply steady; $3.15 bale.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.30; 100-lb. cartons $1.32; 25-lb. cartons $1.45; freight paid to destination.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250-lb. drums $1.35, 200 lb. in 100-lb. drums $1.35, 100-lb. drums $1.38, 25-lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Salisbury, Md.: Demand good; supply limited; meal $98, f.o.b. bulk.

Ft. Worth: Demand and supply fair; 55% protein $87.50, f.o.b. north Texas plants.

Atlanta: Demand fair; trend steady; supply ample; meal $80.50, f.o.b. Georgia and Alabama producing mills.

Los Angeles: Demand fair; trend weaker; supply adequate; $1.45 a unit of protein.

Boston: Demand fair; supply light; $88.50, nominal.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots, in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand slow; trend unchanged; supply adequate; bran, California production, high fat content $51, sacked.

Atlanta: Demand fair; trend steady; supply ample; bran $40@41, delivered.

Ft. Worth: Demand slow; offerings light; carlots, rice bran $33@34, f.o.b. south Texas rice mills; hulls $6.50, f.o.b. mills.

SCREENINGS

Minneapolis: Canadian screenings market broke drastically this week, over supply of loaded cars for spot delivery, future supplies tight, domestic supplies remain short; Canadian $16 for spot delivery, $21 for future; Canadian ground $28; lights $4@10; mediums $11@20; heavies $21@35.

Buffalo: Demand good; trend steady; supply fair; ground, sacked $34, New York, lake and rail; unground, bulk $29, New York.

Chicago: Demand, slight improvement; trend higher; supply fair; carlots, ground grain screenings $32; Canadian $25.40.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@26.

Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand fair for domestic, good for exports; supply sufficient; carlots, bulk, No. 2 yellow milo $1.96@1.98, delivered Texas common points; export rail $1.85.

Los Angeles: Demand steady; trend weaker; supply adequate; milo $2.20 cwt., bulk.

SOYBEAN OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 44% $65.50, bulk, delivered.

Kansas City: Demand slow; trend confused; supply ample, although some mills will be shutting down in September; meal for Kansas City $54.50, bulk, Decatur, but this price may change sharply when September option goes off the futures board; unrestricted $56.

Minneapolis: Demand good; supply adequate, but nearby meal hard to get; trend stronger; $52.50@53, bulk, Decatur.

Los Angeles: Demand limited; trend easier; supply adequate; $77.40, bulk.

Seattle: Demand fair; trend easy; supply ample; $83, delivered, carlots.

Memphis: Demand fair; trend steady; supply limited; prime 44% solvent $58, sacked, f.o.b. Memphis.

Portland: Demand slow; trend higher; supply ample; $52, f.o.b. Decatur.

Denver: Demand and supply fair; trend steady; $73.14, sacked, Denver.

Chicago: Trade in soybean oil meal during the week ending Aug. 19 was by far the best in quite a while. Demand during the past couple of days has been especially broad, with offerings on the limited side. Prices staged a fair sized rally with the market up from $1.50 to as much as $3.50. Curtailed production and lessened offerings appear to have been the main items behind this week's price action. The action in the soybean meal futures gave considerable color to the fear of a temporary shortage of supplies, action being largely confined to the maturing August future. The latter moved up about $2.75 since Aug. 12. The open commitment in August soybean meal on the Chicago Board of Trade has been just about cut in half from that of a week ago—as of the close of business Aug. 18, it showed 276 lots of 100 tons each still open. Quotations, Decatur basis, carlots: 44% protein, unrestricted billing $55.50, eastern restricted $52.50@53; 50% protein, unrestricted $60, eastern restricted $57.50.

TANKAGE

St. Paul: Demand fair; supply adequate; continued downward trend $80@82.

New Orleans: Demand fair; trend steady; supply light; $94.50@96.

Ft. Worth: Demand fair; supply short; 60% digester $79, Ft. Worth.

Omaha: Demand fair; trend steady; supply good; $80.

Louisville: Demand very dull; trend steady to weak; supply good; 60% protein $80@85.

St. Louis: Demand slow; supply ample; trend lower; $80.

Chicago: Demand fair; trend firm; supply ample; carlots, 60% protein, in 100-lb. bags $87.50.

Kansas City: Demand fair; trend steady; supply adequate for demand; 60% digester $80, sacked.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; offerings limited; 5¾¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend steady; commercial grade $54.50, sacked, f.o.b. Buffalo.

Minneapolis: Demand fair; supply ample; $52@53.

New Orleans: Demand and supply fair; trend steady; $60@64.

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TELL THE WHOLE STORY

(Continued from page 2)

their products, the research conducted to back up their decisions and other services they offer.

THESE PROGRAMS are on the right track, but there undoubtedly are opportunities to go further in explaining why "Brand X" (or whatever) feed can be accepted as the right feed for the particular situation for which it was designed. The feeder must be convinced that the research program of the manufacturer is sound, that his scientists weigh economic as well as pure nutritional facts, and that he can turn over his formulation problems to the manufacturer and more profitably devote more time and thought to other phases of his operations. He also should be made to understand the dollars and cents value to him of coordinated skill throughout the manufacturing operation, including sound production and procurement practices.

This "pitch" should make sense to the businessman farmer, and more manufacturers would find it profitable to wind up to deliver it. There is more to the feed industry than grinding and mixing equipment, and the sooner this idea can be firmly fixed in the minds of farmers, the faster the industry will grow.

CAPITAL COMMENT

(Continued from page 5)

the House bill, but it probably will make some substantial amendments, which the House conferees are likely to accept.

Meanwhile, the situation regarding PL 480 is now more clear since the House killed the mandatory barter provision.

Donation Program

It is likely that the Senate will amend its bill now on the Senate floor to provide a broad donation program of edible fats and oils for distribution at home or in foreign nations through the voluntary aid agencies.

Estimates now available indicate that the voluntary donation program may amount to as high as 500 million pounds of edible oils in the crop year, but this figure is an estimate which does not seem to have any better foundation than best guesses by trade and government sources. One thing is certain if the voluntary aid agencies are given a free rein—and this proposed authority is purely permissive—they will go to town in putting margarine, salad oil and shortening in every village and hamlet where they have representatives.

The donation program is little less than a projection of the price support programs on cottonseed and soybeans. The Hubert Humphrey (D., Minn.) bill which has been approved by a Senate committee, proposes that USDA would buy end products of soybeans and cottonseed to a point whereby they would maintain a market price for the basic commodities, which would halt any acquisition of those commodities in the Commodity Credit Corp. inventory.

One can only suppose that with 1960 coming up as a major political year, the USDA administrative staff will find it prudent to take off the market as much edible oils and lard as it can through donation to make for a firm price base in 1960.

The Humphrey donation program for edible fats and oils reveals a fine hand of trade sources. It has been accepted in the Senate Agriculture Committee by ordinary opposition on the grounds that they know the source of the proposal, but they doubt that the presidential timber of Sen. Humphrey can make the grade this coming year.

It may be said that PL 480 extension legislation will be that offered from the Senate side, particularly after the House rejected the House Agriculture Committee version.

The next step after Congressional action will be the announcement of major tightening of barter controls and a program to make available edible oils for domestic and foreign aid. The major problem now is the timing of such programs, which of course contemplate pipeline filling for the voluntary aid agencies.

Such a pipeline filling can be little less than generous, but the big question is, when will it start?

WISCONSIN

(Continued from page 8)

cur in some underfed herds.

Over the years two dozen or more treatments for ketosis have been suggested, Dr. Schultz said, and many aspects of the problem are still not well understood. Based on present information, the following recommendations for aid in ketosis control appear to be warranted, he said:

(1) Avoid having cows excessively fat at calving time, (2) Keep cows full of high quality roughage, (3) Avoid feeding poor quality silage high in butyric acid to fresh cows, (4) Avoid abrupt changes in type of roughage, (5) Bring cows up on full feed after calving as rapidly as good judgment will justify, (6) Feed grain at a level to meet the needs of the cow for energy as indicated by the feeding standards, with limitations at the higher levels to what the cow can handle, (7) Follow current feeding standard recommendations regarding levels of protein, minerals and vitamins, (8) Follow general herd management practices which tend to increase the appetite and aid the comfort of the cow, (9) Feed additives may be helpful in problem herds but should not be used as a substitute for good feeding practices.

He concluded: "The high producing dairy cow with her normally low blood glucose level and high demand for glucose to make milk lactose is working at a rather close margin of safety. With production going up, it is not likely that we will be able to eliminate ketosis from our dairy herds, at least in the near future. About the best we can hope for is to keep it under control by optimum feeding and management and prompt treatment. This is an over-all job requiring the close cooperation of the dairyman and veterinarian."

POULTRY SCIENCE

(Continued from page 4)

feeding was given by Dr. H. L. Fuller, professor of poultry husbandry, University of Georgia. Dr. Fuller had two papers on the program and although one of these papers was read by title only, both will be reviewed in this report. Two series of experiments were conducted.

Georgia Report

In the first series, several thousand pullets were used to determine the best method and time for restricting the feed intake of growing pullets. Two starting diets were used. Birds were fed either a high efficiency starting diet with and without an antibiotic or a low efficiency starting diet for the first 10 weeks. The pullets were then subdivided into three growing treatments and either full fed, semi-restricted or fully restricted based upon the feeding time allowed.

The low efficiency starting diet produced a reduction in body weight at 10 weeks of age but by 20 weeks this difference had disappeared and instead the body weights reflected the severity of restriction during the growing period. Sexual maturity was also delayed 10 to 20 days by feed restriction, depending upon the severity of the restriction.

When the high efficiency starting diets were used, egg production was highest in the restricted groups followed by the semi-restricted groups, and was lowest in the groups which were full-fed during the period from 10 weeks until egg production when the laying mash was placed before the birds. In the case of the low efficiency starting diets, egg production was higher in the full fed and semi-restricted groups and lower in the full restricted groups. Egg size followed a similar pattern in these experiments.

It is apparent from this report that restriction can be too severe which was demonstrated again in the second series of experiments when 1,000 White Leghorn pullets were divided into five treatment groups and the feed was restricted at various ages and for periods of varying duration. In the first case, there was no restriction. In the second case, restriction was from 6 to 12 weeks, in the third, from 6 to 18 weeks, in the fourth from 6 to 24 weeks and in the final treatment from 12 to 24 weeks.

The feed restriction was 9 lb. per 100 birds per day regardless of when restriction was imposed. Growth was depressed in all restricted groups depending upon the severity of restriction which progressed with the age at which the restriction was imposed.

The mortality observed in some of Dr. Fuller's groups made it apparent that the 9 lb. per 100 birds per allowance was insufficient and should have been increased somewhat. Where restriction was continued to 24 weeks, growth of pullets had ceased and the onset of production was delayed by five weeks beyond the controls, but by 30 weeks these groups had attained virtually the same body weight and egg production as the controls. Egg weights were equal in all groups by 20 weeks of age.

Dr. Fuller reviewed a statement made in an earlier published report to the effect that pullets tend to lay the same size eggs on any calendar day of the life of the bird. From the results presented in this report, restriction to 18 weeks is not sufficient to have a significant effect on egg production. Prolonged restriction to 24 weeks resulted in an increased egg production period from 32 to 52 weeks of age both on a hen housed and a hen day basis.

Protein Restriction

A report presented by Dr. C. A. Denton on the "Effect of Protein Restriction in Growing Diets on the Performance of White Leghorn Pullets" might also be mentioned here.

Dr. Denton used the following growing treatments with 225 White Leghorn females per treatment. First, 21% protein to 8 weeks of age followed by 16% protein to housing at 26 weeks of age, 16% protein during the entire period, 16% protein to 8 weeks of age followed by 12% protein to housing, 12% protein during the entire growing period. After housing, isocaloric diets containing 955 calories productive energy per pound were used with formulas containing 12 and 16% protein.

The growing treatments had no effect on egg production or feed conversion on either of the hen diets. The hen diet containing 16% protein produced results superior to that of the diet containing only 12% protein, with regard to egg production and feed conversion.

In the opinion of the writer, this study illustrates that in order to restrict pullets, it is necessary to restrict the caloric intake and not necessarily the protein intake.

Reviewer's Comments

In reviewing these papers, it is quite apparent that the restriction (caloric restriction) of growing pullets has an effect on retarding sexual maturity, the birds have a lower body weight at the start of egg production and egg size may be influenced.

It should be pointed out that in all these studies laying strain stock has been used and not broiler strain stock. The methods of restriction consist of reducing the amount of feed allowed per 100 birds per day. For the average laying strain, from the work of Dr. Quisenberry, it would appear that about 10 lb. per 100 birds per day to 20 weeks of age is in the range for the Texas and southern areas. A larger allotment of feed should be provided for these strains of birds in the northern climates during cold weather.

Dr. Fuller pointed out that an allowance of 9 lb. per 100 birds per day was probably a bit too severe and resulted in some unnecessary mortality.

Another method of practicing restriction of the caloric intake is the use of high fiber formula. The selection of the type of restriction program to be practiced is largely or very largely one to be decided upon by the poultryman and/or the feed manufacturer.

It is quite apparent from the results presented that it is a good idea to restrict the caloric intake of pullets during the growing period and that such restriction should be carried beyond the 18th week. It would probably be most desirable to start feeding the laying mash formula of higher energy and higher protein content at the 23rd or 24th week.

From the work of Dr. Fuller, it is apparent that restricting the caloric intake to the 24th week has an effect in increasing egg production. The conclusion to be drawn from these reports is that the restrictions of the caloric intake will produce better pullets but a selection of the method of restriction is a decision which must be left to the feed manufacturer and the poultryman. It is known that if a high fiber type formula is used feed consumption goes up and may increase to 1½ times that of a pullet fed on a high energy type of formula. The cost of rearing pullets may be higher strictly from the standpoint of feed cost when a high fiber type formula is used. It would appear from the work of Dr. Denton that restricting the protein level in the formula has little if any effect on the feeding program.

Many pullets have been reared under the supervision of the writer at levels of protein not higher than 13%. It is not believed that it is necessary to use a pullet developer formula either of a high or low energy content containing more than 12 to 13% protein. The principal point to keep in mind here is that the caloric restriction will accomplish the purposes desired with a restricted feeding program.

RESTRICTING THE FEED INTAKES OF MEAT TYPE BREEDER CHICKENS—A report on the restriction of the feed intake of three different strains of meat type breeder chickens and also of an egg producing strain was given by Dr. D. H. Sherwood, Larro Research Farm, General Mills, Inc., Indianola, Iowa.

The data presented by Dr. Sherwood did not indicate that it was a good idea to restrict the feed intake of meat type birds nor of a Leghorn Strain Cross. In the first test which involved a meat type bird of unusually good producing ability and which involved only a short term test in winter months, production was definitely lowered by controlling the feed intake. With White Rocks, Dr. Sherwood allowed .3 lb. per bird per day of a high energy type laying mash formula. In the Leghorn Strain Cross study, production was also decreased by this procedure when the feed intake was restricted. In other tests, with meat type birds egg production was about the same on a controlled feed as on a full feed basis. Hatchability and percent of hatchable eggs were at least as good when the hens

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
June 13	1,310	590	913	810	100	742	1,755	1,995
June 20	1,228	635	677	831	110	839	1,742	1,869
June 27	1,263	568	735	962	136	799	1,694	1,963
July 4	1,186	620	814	778	99	818	1,722	2,001
July 11	1,222	551	719	854	106	754	1,778	1,894
July 18	1,202	607	833	825	129	908	1,591	2,055
July 25	1,212	629	707	878	108	865	1,625	2,001
Aug. 1	1,160	638	718	797	111	845	1,550	1,898
Aug. 8	1,163	487	673	736	130	857	1,573	2,033
Aug. 15	1,082	505	757	791	103	815	1,742	1,782

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
June 13	1,168	658	3,037	338	4,961	223	3,461	2,533
June 20	1,322	533	3,019	339	4,807	231	3,470	2,439
June 27	1,124	529	2,926	357	4,922	206	3,461	2,256
July 4	1,066	521	2,981	327	4,776	225	3,406	2,464
July 11	993	550	2,919	351	4,573	172	3,394	2,370
July 18	1,117	565	2,930	366	4,554	160	3,363	2,292
July 25	1,272	515	2,764	354	4,298	187	3,295	2,214
Aug. 1	1,026	484	2,576	331	4,033	144	3,177	2,132
Aug. 8	1,116	445	2,551	348	5,807	158	3,098	2,045
Aug. 15	1,009	528	2,660	292	5,730	177	2,973	2,169

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	Total 22 areas 1958
June 13	3,546	448	2,306	374	276	978	34,359	36,998
June 20	3,398	468	2,299	384	247	1,103	33,990	36,889
June 27	3,231	487	2,367	341	262	1,108	33,597	36,237
July 4	3,580	449	2,250	332	243	1,015	33,673	35,436
July 11	3,525	386	2,301	306	238	1,021	32,977	34,912
July 18	3,483	354	2,157	351	203	945	32,990	33,846
July 25	3,597	423	2,142	303	237	1,045	32,671	33,378
Aug. 1	3,358	363	2,250	287	213	872	30,963	32,440
Aug. 8	3,287	374	2,014	335	165	959	30,354	32,003
Aug. 15	3,077	413	2,073	340	186	878	30,082	31,232

were maintained on a controlled intake basis.

Dr. Sherwood pointed out that two systems of controlling feed intake have been used. The first is to feed on a sliding scale according to body weight, rate of production and environmental temperature. Secondly, to feed at 90% of the estimated full feed intake. If the restricted feed intake program is initiated after the birds have been in egg production for some time, egg production is definitely decreased.

The results of this report indicate that with laying strain birds it is probably not wise to use a restricted feed intake program but to practice good management in preventing feed wastage. Much of the benefit obtained from a controlled feed intake program with the laying strain birds is the prevention of feed wastage. It should also be kept in mind that hens that are laying, or that are in egg production, require more energy in cold weather. In the opinion of the writer, it is quite desirable to limit the energy intake of broiler strain birds, but the energy requirements of the laying hens must be adequately provided for.

PROTEIN, AMINO ACID REQUIREMENTS AND ENERGY RELATIONSHIPS IN LAYING HEN NUTRITION—There were eight papers presented on the subjects of fats and fatty acids, protein-energy relationships, protein requirements and amino acid imbalances in laying hen nutrition. These were presented by personnel from the Texas Agricultural Experiment Station, Iowa State University, University of Minnesota, Ohio State University, Colorado State University, Purdue University and Rutgers.

Fats and Fatty Acids

The first of these papers was presented by Dr. R. E. Davies, Texas Agricultural Experiment Station, and was concerned with effect of varying levels of fats and free fatty acids on the performance of caged layers.

The fat products varied in free fatty acid content from 15 to 90% and were blends of hydrolyzed and neutral vegetable fats. One sample of neutral animal fat was also included. All fat products were fed at levels of 2½ and 5% with a 17% protein laying mash formula. The diets were adjusted to the same protein level.

The principal point to bring out from this presentation in the opinion of the writer was the fact that a product containing as much as 90% free fatty acids could be used successfully in poultry feeds.

The energy levels of the diets used in this study were 908, 933 and 974 calories of productive energy per pound. Egg production was not appreciably affected by any treatment. Feed conversion and egg weight were improved by the addition of any of the levels of fat to the diet. It might also be pointed out in this study that feed conversion was improved 4.73% by the addition of 2½% animal fat to the diet (933 calories productive energy per pound), whereas the addition of an extra 2½% added fat making the total added fat up to 5% (974 calories productive energy per pound) did not improve feed conversion except to the extent of .73% over that obtained by the addition of the 2½% added fat.

The liver fat and liver weights of the birds at the end of the study were not affected by the type of fat and serum cholesterol was likewise unaffected. The aorta cholesterol was depressed by feeding the animal fat.

Animal and Vegetable Fats

Dr. Daghir, Iowa State University, presented the second paper which was concerned with egg production, egg quality, and serum cholesterol levels as influenced by the feeding of animal and vegetable fats.

Twelve per cent soybean oil or 12% animal fat were each fed in combination with 400, 700 and 1,000 mg. of choline per pound of diet to Single Comb White Leghorn hens.

The principal point which was called to the attention of the writer from this paper was the fact that egg production was increased when the level of choline in the diet was raised to 700 mg. choline per pound of diet. It has been pointed out during the past three years, in various articles by the writer, that it is necessary to add choline to laying hen formulations. The different levels of choline did not have any effect on the level of serum cholesterol. Soybean oil decreased serum cholesterol which is in line with other studies reported.

Dietary Energy, Protein Level

The next presentation was made by Dr. P. E. Waibel, University of Minnesota, and was concerned with the effect of dietary energy and protein level as well as the energy source on the performance of White Leghorn pullets in cages.

Protein levels used in this study ranged from 10 to 30% and were each combined with either 10% bleachable fancy tallow or 10% oats and 5% of wheat standard middlings, wheat bran and alfalfa. Thus, it is apparent from the presentation that with the high and low energy series, 15% and 12½% protein were adequate respectively for optimum egg production and weight. Hens fed the low energy diet consume more feed for maintenance and egg production and thus the actual intake of protein might have been equal to that of the birds fed the higher anti-series with the high level protein.

This is what might be expected, that is, the requirement for protein with the high energy series was 15% and with the low energy series 12.5%. Birds fed the low energy diet with 12.5% protein consume more feed for maintenance and for egg production than with the higher protein (15%) and the higher energy formula. Thus, birds fed the lower protein, lower energy formula were probably consuming about the same quantity of protein on a per day basis as those fed the high energy and high protein diet.

University of Minnesota workers conducted a second experiment in which a corn-soybean oil meal diet was used as the basal. Modifications included 10% each of bleachable fancy beef tallow, lard, corn oil, safflower oil and the substitution of 40% oats in the formula. All diets contained 15-16% protein. Egg production was not changed or modified. Per cent egg production was about the same for all groups. All birds fed diets containing fat had a higher total carcass fat. At 10 weeks, groups fed no supplementary fat showed lower cholesterol values than did the fat supplemented groups. At 20 weeks the animal fat-fed groups showed cholesterol values which were higher than those of the birds which were fed no added fat or higher than the groups fed vegetable oil as a source of fat.

Protein Interrelationships

Dr. Touchburn, Ohio Agricultural Experiment Station, presented the next paper on the "Protein Energy Values and Protein Interrelationships for Laying Hens."

Egg production type pullets were fed protein levels of 12, 16 and 20% and productive energy levels of 720, 960 and 1,200 calories per pound respectively.

The efficiency of feed utilization for egg production increased in this study as the protein and/or energy content increased but the rate of increase was somewhat less than what was theoretically expected. Egg production, body weight increase and feed efficiency of birds fed 16% protein and 960 calories productive energy per pound were identical even though two diets were formulated from different ingredients.

The Ohio workers concluded that the productive energy values assigned to the ingredients appeared to be reliable and to adequately predict the efficiency of feed utilization for egg production. Moreover, these workers considered further that fiber as such did not retard feed utilization efficiency.

The incidence of feather picking increased as the nutrient density of the diet increased. Feather picking was quite marked in the group which received 12% protein and 960 calories productive energy per pound.

The attention of the reader is directed to the conclusions of the Ohio workers to the effect that the productive energy values assigned to the ingredients appeared to be reliable and to adequately predict the efficiency of feed utilization for egg production. This is called to the readers' attention since there will be quite a discussion later concerning the use of metabolizable energy figures or values for evaluating feed ingredients.

Low Protein Levels

Dr. Paul A. Thornton, Colorado State University, presented a paper on the adequacy of low protein levels for egg productions under various conditions. A number of factors which might affect the protein requirement of laying hens were either listed by Dr. Thornton or brought out during the discussion of this paper.

The factors which may affect the protein requirements are: Rate of egg production, breed or strain, the energy content of the diet, season, section of the country, management procedure followed and possibly even the list of ingredients used to make up the formula. The latter might be concerned with the amino acid availability of the protein sources used in the formulation of the feed.

Dr. Thornton used four levels of protein, 11, 13, 15 and 17%; four different strains of birds; cage management and floor management. The protein levels were also tested with high and low dietary energy levels.

From the results presented by Dr. Thornton, it was quite evident that under the conditions which exist at the Colorado State University and with all the strains and different types of management employed, the 13% protein all mash laying formula was comparable to the higher protein levels for egg production and feed conversion. Other observations which included hatchability, fertility, interior egg quality, egg weight and shell thickness also indicated that the 13% protein diet was adequate.

The formula which contained 11% protein was insufficient to meet the amino acid needs of the laying hens under all conditions when the dietary energy level was high. If the dietary energy level was reduced, the 11% protein formula was comparable to the higher protein levels for egg production, feed efficiency and hatchability.

Oil Meal Protein

Dr. D. J. Bray, University of Illinois, presented a paper which was concerned with the effect of different proportions of corn and soybean oil meal protein on the performance of laying pullets.

Two levels of protein were used in these studies—10 and 16%. The 10% protein formula was not adequate for maintaining egg production or body weight. It was demonstrated that the best performance was obtained when the soybean oil meal contributed from 15 to 16% of the total protein in the formula. It should be pointed out here that the 16% protein formula was the formula of choice as the result of these studies.

Amino Acid Balance

Dr. Paul Griminger presented the next paper which was a part of the series concerned with the amino acid requirement of laying hens from Rutgers. The title of this paper was concerned with the effect of amino acid balance and low protein diets for laying hens.

Protein levels used in this study were 10.4 and 15%. Formulas were fed for a period of six months. Gelatin, zein and glutamic acid were used to bring about imbalances in the amino acid make up of the formulas.

Dr. Griminger concluded that amino acid balance was an important factor in the protein nutrition of the hen when the amino acid or protein intakes were at marginal levels. Excesses of certain amino acids must be taken into account in formulating practical laying mash feeds.

Points of Interest

In the opinion of the writer, a number of points of interest to the feed industry were apparent at the end of this series of discussions. Some of these have been repeated many times in the past. First, the protein requirement may vary with a number of factors which are here listed. Secondly, feed conversion improves as the energy content of the diet is increased. The increase in the energy content of the diet, however, has little effect on egg production. It is predicted that a great deal of emphasis will be placed on the formulation of laying hen feeds in the future so as to make up formulations to meet the nutritive requirement of the bird with regard to the strain, season, and even the stage of egg production.

Information presented indicated that there may be quite different requirements of various nutrients as the production or age of the birds progresses. Certainly emphasis will be placed on formulating hen diets with regard to the temperature and the section of the country. It is quite apparent from data at hand that the 13% level of protein is inadequate in the South and Southwest during the hot summer months. The feed consumption of the laying hens is reduced during this period and as a consequence the protein content of the formulas must be increased.

It is predicted that in the future many of the discrepancies which exist with regard to research reports on the protein requirement of laying hens will be explained and evaluated as more data become available.

MARKETS

(Continued from page 2)

market action seem to be of the opinion that any improvement in demand could well be delayed beyond the normal time this year because of ample rains and resultant lush pasturage in the range country.

Northeast

Harvests in this region are pretty well over, and farmers from now on will be able to ascertain their fall feeding needs. Consumers were in the market in the previous week, in abundance and, as a result, sales this week slipped and mills cut their running time.

Dairy feed turnover was an in-and-out affair. The lush pasture season has been over for some time but rains have kept them in fair shape.

Egg mashes carried the bulk of sales. Turkey feed demand was good, but broiler feeds lagged.

Egg prices were little changed, but broilers rallied ½@1¢ a pound, and this could stimulate a little demand for feed. The rise was attributed to less than anticipated future supplies.

There was little change in the ingredient market during the week.

Running time of formula feed manufacturers dropped to 32 hours last week from 40 hours in the preceding week.

Ohio Valley

Area manufacturers of formula feeds are looking forward to the windup of August business, which has been considerably more depressed as compared with the excellent volume recorded earlier in the summer.

While the threat of severe drouth conditions, which had more or less plagued valley farmers since midsummer, was somewhat relieved last week by a general rainfall of an inch or more, a new threat has developed for the harvesting of an anticipated satisfactory harvest of fall crops. This is the advent of swarms of grasshoppers in hundreds of valley farms, which have infested fields of corn and hay as well as flowers, shrubs and trees.

According to reports from nearby upstate Ohio, many acres of both field and sweet corn have been severely damaged, with one farmer reporting that "in 35 years there's never been anything like this." Because of the present size of corn and some other fall crops, spraying operations are said to be ineffective.

Another handicap currently affecting the area feed market is the quite sharp decline during recent months in the production of baby chicks and turkey poults, because of the continuing depressed and unprofitable markets. With farm prices for eggs fluctuating this week between 28¢ and 30¢ doz., compared with a cent or more higher prices a week earlier, and with ample supplies of poultry being offered at wholesale markets, farmers certainly are being offered no encouragement to increase production.

South Central

Feed mills are having a rather quiet week—demand seems dull and listless. Nevertheless, a fairly good volume of feed continues to leave the plants each day. Running time is about normal for this period of the year, all mills are operating at least four days, some five and a few with two shifts.

Several manufacturers stress the fact that their present volume is being achieved despite a discouraging lack of poultry feed sales. Business would be near top levels now, they said, if this year's poultry feed demand had not fallen off so sharply.

Some mill operators think that formula feed usage may be heavier than the present feed mill deliveries indicate. They report their dealers are buying cautiously and working down their inventories expecting that weakness in feed grains and soybeans will eventually be reflected in lower formula feed prices.

Mountain States

Formula feed dealers reported this week that their sales volume is down somewhat from the previous week. However, it is still up from a year ago at this time.

Feeds in most demand this past week have been turkey feeds. Cattle feed has been off the past week because there are very few cattle in small feed lots. In fact, almost all of the small feed lots are empty at the present time.

Pacific Northwest

Feed ingredient listings continued to follow a mixed trend during the week's trading at Portland and Seattle where trading was considered seasonally slow and mostly on a nearby basis.

Trade sources reported that feedstuffs buying interest was restricted by such factors as plentiful feed grain supplies, fairly good pastures and seasonal formula feed buying.

Mixers indicated that egg, broiler and turkey mashes continued to move in fair volume, but that dairy and other livestock feeds found the going slow in front of a narrow demand.

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Lawrence Schaffel In New Position

NEW YORK — Lawrence Schaffel has been named advertising and sales promotion manager for Barth Levitt Products, New York, announced S. Barth Levitt, president of the firm. The firm distributes natural vitamin and health products throughout the U.S.

Mr. Schaffel is a grdauate of the school of nutrition at Cornell University, where he received his M.S. degree. For the past seven years he has been advertising manager of agricultural products for Commercial Solvents Corp.

Dr. Joseph C. Blight, Nutritionist, Dies

NEW BRUNSWICK, N.J. — Dr. Joseph C. Blight, 37, of the New Jersey State Feed Control Office, died recently in a New York Hospital. Dr. Blight had been in ill health for a number of years.

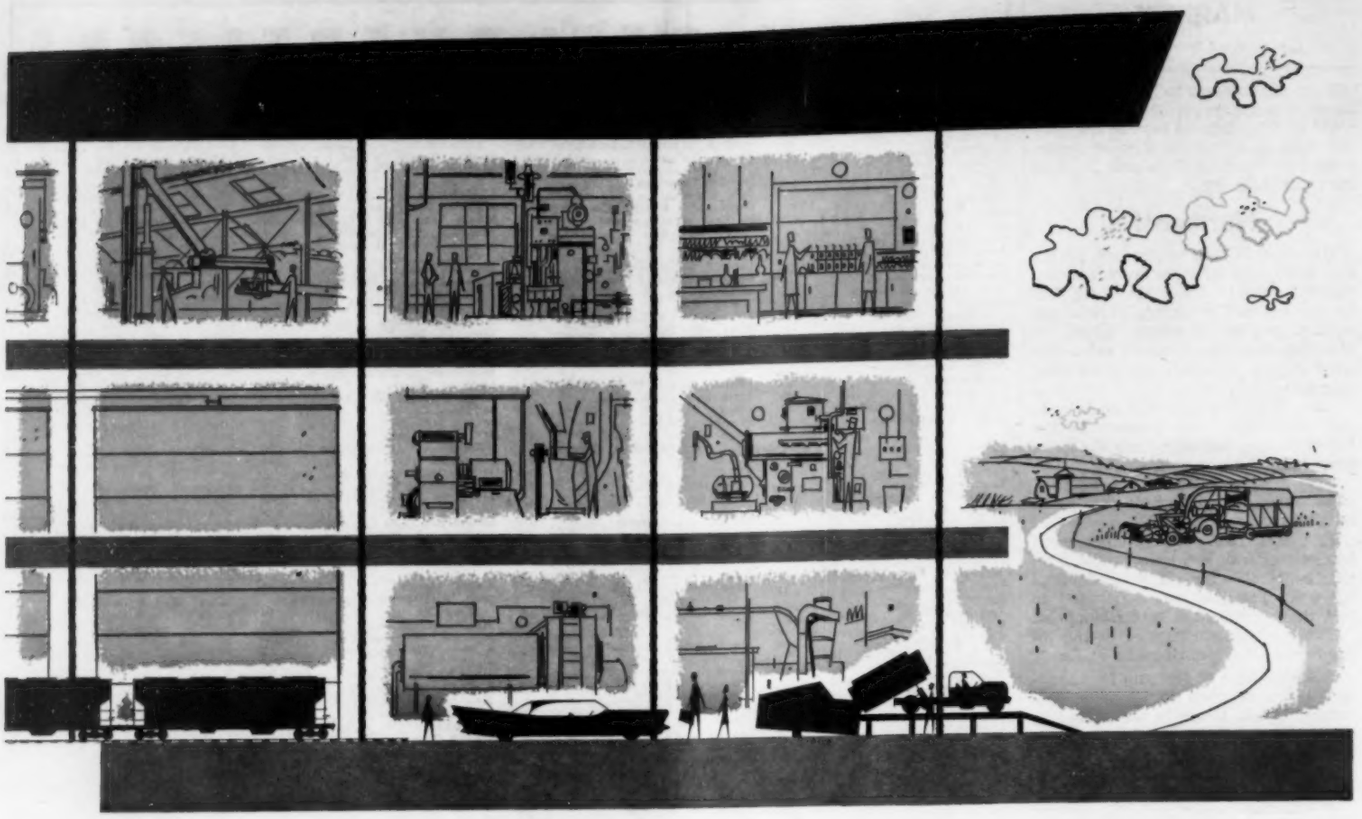
He had a wide acquaintanceship in the feed industry, having served as director of nutrition research for Dixie Mills, East St. Louis, Ill., and later with Peter Hand Foundation Chicago, for three years. He had been with the New Jersey Feed Control office about a year and a half.

He was a graduate of Rutgers University, and prior to his connection with Dixie Mills, was with the U.S. Department of Agriculture at the Beltsville, Md., research center.

To Hold Referendum

RALEIGH, N.C.—The State Board of Agriculture recently authorized the North Carolina Poultry Council to hold a referendum on a poultry assessment.

Details of the referendum will be announced later by the council. The request was presented to the board by H. C. Kennett of Durham, president of the poultry group.



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